=> FILE REG
FILE 'REGISTRY' ENTERED AT 15:20:02 ON 27 JUL 2007

=> DISPLAY HISTORY FULL L1-

FILE 'HCA' ENTERED AT 15:00:42 ON 27 JUL 2007
L1 76889 SEA (ELECTROCHEM? OR ELECTROLY? OR GALVAN?)(2A)(CELL OR CELLS)

FILE 'REGISTRY' ENTERED AT 15:00:42 ON 27 JUL 2007
E TITANIUM/CN
L2 1 SEA TITANIUM/CN
E TITANIA/CN
L3 1 SEA TITANIA/CN

FILE 'HCA' ENTERED AT 15:06:32 ON 27 JUL 2007
L4 163 SEA (L2 OR TITANIUM# OR TI)(3A)CURRENT?(3A)COLLECT?
L5 273896 SEA L3 OR (TITANIUM# OR TI)(W)(OXIDE# OR DIOXIDE#) OR TITANIA# OR TIO2
L6 102 SEA (L2 OR TITANIUM# OR TI)(2A)(CASING# OR HOUSING#)
L7 34 SEA L1 AND L4
L8 2072 SEA L1 AND L5
L9 12 SEA L1 AND L6
L10 5 SEA L7 AND L8
L11 240274 SEA (BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY? OR GALVANI? OR WET OR DRY OR PRIMARY OR SECONDARY)(2A)(CELL OR CELLS) OR WETCELL? OR DRYCELL?)/BI,AB
L12 136 SEA L11 AND L4
L13 4656 SEA L11 AND L5
L14 18 SEA L11 AND L6
L15 15 SEA L12 AND L13
L16 17 SEA L9 OR L10
L17 16 SEA (L14 OR L15) NOT L16
L18 29 SEA L7 NOT (L16 OR L17)
L19 17 SEA 1840-2003/PY,PRY AND L16
L20 15 SEA 1840-2003/PY,PRY AND L17
L21 27 SEA 1840-2003/PY,PRY AND L18

=> FILE HCA
FILE 'HCA' ENTERED AT 15:20:33 ON 27 JUL 2007

=> D L19 1-17 BIB ABS HITSTR HITIND

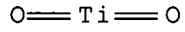
L19 ANSWER 1 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 141:91859 HCA Full-text
TI Oxidized **titanium** as a cathodic **current collector**
IN Brown, W. Richard; Frysz, Christine A.; Smesko, Sally Ann; Takeuchi, Esther S.
PA USA
SO U.S. Pat. Appl. Publ., 19 pp., Cont.-in-part of U.S. Ser. No. 918,139.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004131943	A1	20040708 <--	US 2003-680698	200310 07
US 2003113632	A1	20030619 <--	US 2001-918139	200107 30

PRAI US 2001-918139 A2 20010730 <--

AB A titanium substrate having a thickened outer oxidn. layer provided thereon by a treatment process performed either in an air atm. at elevated temps. or through electrolytic oxidn. (anodization), is described. The thus conditioned titanium substrate serving as a cathode current collector for an electrode incorporated into an **electrochem. cell** exhibits improved elec. performance in comparison to the prior art techniques, i.e., elec. conducted carbon coated titanium screen and use of highly corrosion resistant materials, upon subsequent elevated temp. exposure.

IT **13463-67-7**, **Titanium oxide**, uses
(oxidized **titanium** as cathodic **current collector**)
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M004-66
ICS H01M004-74; H01M004-62; H01M004-48; H01M004-50; H01M004-52; H01M004-58; H01M004-54; H01M010-04
INCL 429245000; 429241000; 429231500; 429219000; 429220000; 429223000; 429231700; 429224000; 429217000; 429232000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST battery cathode **current collector** oxidized **titanium**
IT Fluoropolymers, uses
Polyamides, uses
Polyimides, uses
(binder; oxidized **titanium** as cathodic **current collector**)
IT Anodization
Battery cathodes
Primary batteries
(oxidized **titanium** as cathodic **current collector**)
IT Carbonaceous materials (technological products)
Metals, uses
Oxides (inorganic), uses
Sulfides, uses
(oxidized **titanium** as cathodic **current collector**)
IT Carbon black, uses
(oxidized **titanium** as cathodic **current collector**)
IT 9002-84-0, Ptfe 24937-79-9, Polyvinylidene fluoride 25038-71-5, Ethylene-tetrafluoroethylene copolymer
(binder; oxidized **titanium** as cathodic **current collector**)
IT 1313-13-9, Manganese dioxide, uses 1313-99-1, Nickel oxide, uses 1344-70-3, Copper oxide 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 11104-61-3, Cobalt oxide 11105-02-5, Silver vanadium oxide 11115-78-9, Copper sulfide 11126-12-8, Iron sulfide 12039-13-3, Titanium sulfide (TiS2) 12068-85-8, Iron disulfide 12789-09-2, Copper vanadium oxide **13463-67-7**, **Titanium oxide**, uses 51311-17-2, Carbon fluoride 181183-66-4, Copper Silver vanadium oxide
(oxidized **titanium** as cathodic **current collector**)
IT 7782-42-5, Graphite, uses

(oxidized **titanium** as cathodic **current collector**)
IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 12597-68-1, Stainless steel, uses
(powder; oxidized **titanium** as cathodic **current collector**)

L19 ANSWER 2 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 139:279113 HCA Full-text
TI **Electrochemical cell** with reduced height fill port
IN Heller, Bernard Frank
PA Medtronic, Inc., USA
SO U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003183515	A1	20031002	US 2002-112964	200203 29
			<--	
US 6844106	B2	20050118		
WO 2003085753	A2	20031016	WO 2003-US8195	200302 17
			<--	
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003220359	A1	20031020	AU 2003-220359	200302 17
			<--	
US 2005084746	A1	20050421	US 2004-974378	

200410
27
<--
PRAI US 2002-112964 A 20020329 <--
WO 2003-US8195 W 20030217 <--
AB An **electrochem. cell** including a cell enclosure, a fill tube, a ball, a closing button, an anode, a cathode, and an electrolyte. The cell enclosure defines an internal vol. and includes a cover forming a fillport through hole. The fill tube is sep. formed, and defines a leading section, a trailing section, and a passageway. The leading section is secured within the fillport through hole. The ball is sealingly secured within the passageway. The closing button is also sep. formed, and is sealingly secured within the fillport through hole adjacent the leading section of the fill tube. The anode, cathode, and electrolyte are maintained within the internal vol. By configuring the fill tube such that the leading section thereof is secured within the fillport through hole, an overall extension of the fill tube relative to the internal vol. is greatly reduced, thereby maximizing a volumetric efficiency.
IT **7440-32-6, Titanium**, uses
(**housing** of nonaq. lithium battery in body-implantable devices)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM C25C007-00
INCL 204275100
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **electrochem cell** nonaq lithium battery body implantable device titanium
IT Dental materials and appliances
(implants; **electrochem. cell** with reduced height fill port for powering of)
IT **Electrochemical cells**
(with reduced height fill port)
IT **7440-32-6, Titanium**, uses
(**housing** of nonaq. lithium battery in body-implantable devices)
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 3 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 139:39168 HCA Full-text
TI Oxidized **titanium** as a cathodic **current collector**
IN Brown, W. Richard; Frysz, Christine A.; Smesko, Sally Ann; Takeuchi, Esther S.

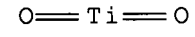
PA USA
SO U.S. Pat. Appl. Publ., 18 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003113632	A1	20030619 <--	US 2001-918139	200107 30
US 2004131943	A1	20040708 <--	US 2003-680698	200310 07

PRAI US 2001-918139 A2 20010730 <--

AB A titanium substrate having a thickened outer oxidn. layer provided thereon by a treatment process performed either in an air atm. at elevated temps. or through electrolytic oxidn. (anodization), is disclosed. The thus conditioned titanium substrate serving as a cathode current collector for an electrode incorporated into an **electrochem. cell** exhibits improved elec. performance in comparison to the prior art techniques, i.e., elec. conducted carbon coated titanium screen and use of highly corrosion resistant materials, upon subsequent elevated temp. exposure.

IT **13463-67-7, Titanium oxide**, uses
(oxidized **titanium** as cathodic **current collector**)
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M004-66
ICS H01M004-70; H01M004-48; H01M004-50; H01M004-52; H01M004-54; H01M004-58; C25D011-34
INCL 429245000; 429241000; 429219000; 429220000; 429224000; 429231500; 429223000; 429231800; 429221000; 429231700
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
ST battery cathodic **current collector** oxidized **titanium**
IT Fluoropolymers, uses
Polyamides, uses
Polyimides, uses

(binder; oxidized **titanium** as cathodic **current collector**)
IT Primary batteries
(lithium, Li-carbon fluoride; oxidized **titanium** as cathodic **current collector**)
IT Anodization
Battery cathodes
Oxidation, electrochemical
(oxidized **titanium** as cathodic **current collector**)
IT Carbonaceous materials (technological products)
Metals, uses
Oxides (inorganic), uses
Sulfides, uses
(oxidized **titanium** as cathodic **current collector**)
IT Carbon black, uses
(oxidized **titanium** as cathodic **current collector**)
IT 9002-84-0, Ptfe 24937-79-9, Polyvinylidenefluoride 25038-71-5, Ethylene tetrafluoroethylene copolymer
(binder; oxidized **titanium** as cathodic **current collector**)
IT 1313-13-9, Manganese dioxide, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 11104-61-3, Cobalt oxide 11105-02-5, Silver vanadium oxide 11115-78-9, Copper sulfide 11126-12-8, Iron sulfide 12039-13-3, Titanium sulfide (TiS2) 12068-85-8, Iron sulfide fes2 12789-09-2, Copper vanadium oxide **13463-67-7, Titanium oxide**, uses 51311-17-2, Carbon fluoride 181183-66-4, Copper Silver vanadium oxide
(oxidized **titanium** as cathodic **current collector**)
IT 7782-42-5, Graphite, uses
(oxidized **titanium** as cathodic **current collector**)
IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 12597-68-1, Stainless steel, uses
(powder; oxidized **titanium** as cathodic **current collector**)

L19 ANSWER 4 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 138:388239 HCA Full-text
TI In situ thermal polymerization method for making gel polymer lithium ion rechargeable **electrochemical cells**
IN Xing, Weibing; Takeuchi, Esther S.

PA USA
SO U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003104282	A1	20030605	US 2001-883 200111 15 <--	
PRAI US 2001-883		20011115 <--		

AB A single step, in situ curing method for making gel polymer lithium ion rechargeable cells and batteries is disclosed. This method used a precursor soln. consisting of monomers with multiple functionalities such as multiple acryloyl functionalities, a free-radical generating activator, nonaq. solvents such as ethylene carbonate and propylene carbonate, and a lithium salt such as LiPF6. The electrodes are prepd. by slurry-coating a carbonaceous material such as graphite onto an anode current collector and a lithium transition metal oxide such as LiCoO2 onto a cathode current collector, resp. The electrodes, together with a highly porous separator, are then soaked with the polymer electrolyte precursor soln. and sealed in a cell package under vacuum. The whole cell package is heated to in situ cure the polymer electrolyte precursor. The resulting lithium ion rechargeable cells with gelled polymer electrolyte demonstrate excellent electrochem. properties such as high efficiency in material utilization, high Coulombic efficiency, good rate capability, and good cyclability.

IT **7440-32-6**, **Titanium**, uses
(anode **current collector**; in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IT **13463-67-7**, **Titanium oxide**, uses
(in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)

O=Ti=O

IC ICM H01M010-40
ICS H01M004-58; H01M004-66
INCL 429303000; 429189000; 429231800; 429245000; 429231100; 029623100
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Battery electrolytes
(in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
IT Carbon black, uses
Coke
(in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
IT Secondary batteries
(lithium; in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
IT Polymerization
(thermal; in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses **7440-32-6**, **Titanium**, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 11101-13-6 12597-68-1, Stainless steel, uses
(anode **current collector**; in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
IT 7440-44-0, Carbon, uses
(glassy; in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
IT 94-36-0, Benzoyl peroxide, processes 105-74-8, Lauroyl peroxide 2094-98-6, 1,1'-Azobis(cyclohexanecarbonitrile) 2638-94-0, 4,4'-Azobis(4-cyanovaleric acid) 3006-86-8, 1,1-Bis(tert-butylperoxy)cyclohexane 15667-10-4, 1,1-Bis(tert-amylperoxy)cyclohexane
(in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)
IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 556-65-0, Lithium thiocyanate 685-91-6, n,n-Diethylacetamide 1313-13-9, Manganese dioxide, uses 1313-99-1, Nickel oxide (NiO), uses 1314-62-1, Vanadia, uses 1317-37-9, Iron sulfide (FeS) 1332-37-2, Iron oxide, uses 1344-70-3, Copper oxide 2923-17-3 4437-85-8, Butylene carbonate 7782-42-5, Graphite, uses 7784-01-2, Silver chromate 7789-19-7, Copperfluoride (CuF2) 7791-03-9, Lithium perchlorate 11098-99-0, Molybdenum oxide 11099-11-9, Vanadium oxide 11104-61-3, Cobalt oxide 11105-02-5, Silver vanadium oxide 11113-75-0, Nickel

sulfide 11115-76-7, Cobalt selenide 11115-77-8, Cobalt telluride 11115-78-9, Copper sulfide 11115-99-4, Nickel selenide 11116-00-0, Nickel telluride 11118-57-3, Chromium oxide 11126-12-8, Iron sulfide 11129-60-5, Manganese oxide 11130-24-8, Vanadium sulfide 12031-65-1, Lithium nickel oxide (LiNiO2) 12039-13-3, Titanium sulfide (TiS2) 12057-17-9, Lithium manganese oxide (LiMn2O4) 12057-24-8, Lithia, uses 12068-85-8, Iron sulfide (FeS2) 12162-79-7, Lithium manganese oxide (LiMnO2) 12162-92-4, Lithium vanadium oxide (LiV2O5) 12190-79-3, Cobalt lithium oxide (CoLiO2) 12612-50-9, Molybdenum sulfide 12623-97-1, Chromium sulfide 12627-00-8, Niobium oxide 12653-56-4, Cobalt sulfide 12673-92-6, Titanium sulfide 12687-82-0, Manganese sulfide 12789-09-2, Copper vanadium oxide 12795-09-4, Copper telluride 13453-75-3 **13463-67-7, Titanium oxide**, uses 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate 20667-12-3, Silver oxide (Ag2O) 21324-40-3, Lithium hexafluorophosphate 22205-45-4, Copper sulfide (Cu2S) 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate 37320-90-4, Manganese selenide 37359-15-2, Copper selenide 39290-91-0, Niobium sulfide 39361-71-2, Titanium telluride 50808-87-2, Molybdenum telluride 50814-22-7, Chromium telluride 50926-12-0, Iron selenide 50926-13-1, Iron telluride 51311-17-2, Carbon fluoride 54183-54-9, Molybdenum selenide 54427-25-7, Vanadium telluride 58319-81-6, Manganese telluride 64176-75-6, Niobium selenide 66675-50-1, Titanium selenide 66675-60-3, Chromium selenide 90076-65-6 115028-88-1 131344-56-4, Cobalt lithium nickel oxide 132404-42-3 135751-98-3, Vanadium selenide 162124-03-0, Niobium telluride 181183-66-4, Copper Silver vanadium oxide 188029-35-8, Lithium **titanium oxide** (Li4-7Ti5O12) 423734-10-5, Cobalt lithium nitride (Co0.1-0.6Li2.4-2.9N) 423734-14-9, Lithium nickel nitride (Li2.4-2.9Ni0.1-0.6N) 527698-30-2, Copper lithium tin oxide (Cu0.92LiSn0.08O2)
(in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)

IT 26426-04-0P, Trimethylolpropane trimethacrylate homopolymer 57592-66-2P, Pentaerythritol tetraacrylate homopolymer 57592-67-3P, Hexanediol diacrylate homopolymer 64401-02-1P, Bisphenol A-ethylene oxide adduct diacrylate 67653-78-5P, Dipentaerythritol hexaacrylate homopolymer 82200-28-0P, Dipentaerythritol pentaacrylate homopolymer 85887-85-0P, Ethoxylated trimethylolpropane triacrylate homopolymer

103315-68-0P, Di(trimethylolpropane)tetraacrylate homopolymer
117223-60-6P
(in-situ thermal polymn. method for making gel polymer lithium ion rechargeable **electrochem. cells**)

L19 ANSWER 5 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 136:372303 HCA Full-text
TI Double current collector anode design for alkali metal ion **electrochemical cells**
IN Gan, Hong; Rubino, Robert S.; Takeuchi, Esther S.
PA Wilson Greatbatch Ltd., USA
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 6

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1207571	A2	20020522	EP 2001-127533	200111 18
			<--	
EP 1207571	A3	20050824		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002061446	A1	20020523	US 2001-8977	200111 08
			<--	
US 6737191	B2	20040518		
JP 2002198061	A	20020712	JP 2001-349778	200111 15
			<--	
CA 2363162	A1	20020517	CA 2001-2363162	200111 16
			<--	
JP 2002198035	A	20020712	JP 2001-351632	200111 16
			<--	
JP 2002203607	A	20020719	JP 2001-351633	200111 16

<--
JP 2002237334 A 20020823 JP 2001-390626
200111
16
<--
JP 2002270162 A 20020920 JP 2001-390625
200111
16
<--
JP 2002237310 A 20020823 JP 2001-395430
200111
19
<--
PRAI US 2000-249688P P 20001117 <--
US 2001-8977 A 20011108 <--

AB A new sandwich neg. electrode design for a secondary cell is provided comprising a "sacrificial" alkali metal along with a carbonaceous anode material. In the case of a hard carbon anode material, the sacrificial alkali metal is preferably lithium and is sized to compensate for the initial irreversible capacity of this anode material. Upon activating the cells, the lithium metal automatically intercalates into the hard carbon anode material. That way, the sacrificial lithium is consumed and compensates for the generally unacceptable irreversible capacity of hard carbon. The superior cycling longevity of hard carbon now provides a secondary cell of extended use beyond that known for conventional secondary cells having only graphitic anode materials.

IC ICM H01M004-02
ICS H01M004-36; H01M004-66; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63

IT Battery anodes
Secondary batteries
(double current collector anode design for alkali metal ion **electrochem. cells**)
IT Alkali metals, uses
Alkaline earth metals
Carbon black, uses
Carbonaceous materials (technological products)
Coke
Group IIIB elements
(double current collector anode design for alkali metal ion **electrochem. cells**)
IT Medical goods
(implantable; double current collector anode design for alkali metal ion **electrochem. cells**)
IT Borate glasses
Phosphate glasses
(tin borophosphate; double current collector anode design for alkali metal ion **electrochem. cells**)

IT 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 11101-13-6
(current collector; double current collector anode design for alkali metal ion **electrochem. cells**)

IT 67-68-5, Dmso, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 79-20-9, Methyl acetate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, DiEthyl carbonate 108-29-2, γ-Valerolactone 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 111-96-6, Diglyme 112-49-2, Triglyme 127-19-5, Dimethyl acetamide 143-24-8, Tetraglyme 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 872-50-4, uses 1313-13-9, Manganese dioxide, uses 1314-62-1, Vanadium pentoxide, uses 1317-37-9, Iron sulfide fes 1344-70-3, Copper oxide 2923-17-3 5137-45-1, 1-Ethoxy-2-methoxyethane 7439-93-2, Lithium, uses 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 7784-01-2, Silver chromate 7791-03-9, Lithium perchlorate 11105-02-5, Silver vanadium oxide 12019-06-6, Copper dioxide 12031-65-1, Lithium nickel oxide linio2 12039-13-3, **Titanium** sulfide (TiS2) 12057-17-9, Lithium manganese oxide limn2o4 12057-24-8, Lithia, uses 12068-85-8, Iron sulfide fes2 12162-79-7, Lithium manganese oxide limno2 12162-92-4, Lithium vanadium oxide liv2o5 12190-79-3, Cobalt lithium oxide colio2 12789-09-2, Copper vanadium oxide 13453-75-3, Fluorosulfuric acid, lithium salt 13478-41-6, Copper fluoride Cuf 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18282-10-5, Tin dioxide 18424-17-4, Lithium hexafluoroantimonate 20667-12-3, Silver oxide ag2o 21324-40-3, Lithium hexafluorophosphate 21651-19-4, Tin monoxide 22205-45-4, Copper sulfide cu2s 25455-73-6, Silver oxide ag2o2 29935-35-1, Lithium hexafluoroarsenate 33454-82-9 35363-40-7, Ethyl propyl carbonate, uses 51311-17-2, Carbon fluoride 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 113443-18-8, Silicon oxide SiO 115028-88-1 131344-56-4, Cobalt lithium nickel oxide 132404-42-3 181183-66-4, Copper silver vanadium oxide 188029-35-8, Lithium **titanium oxide** Li4-7Ti5O12 256650-80-3, Cobalt lithium tin oxide Co0.92LiSn0.08O2 423734-10-5, Cobalt lithium nitride (Co0.1-0.6Li2.4-2.9N) 423734-14-9, Lithium nickel nitride (Li2.4-2.9Ni0.1-0.6N)
(double **current collector** anode design for alkali metal ion **electrochem. cells**)

IT 12597-68-1, Stainless steel, uses
(double current collector anode design for alkali metal ion

electrochem. cells)
IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-32-6, **Titanium**, uses
(powder; double **current collector** anode design for alkali metal ion **electrochem. cells**
)

L19 ANSWER 6 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 132:224886 HCA Full-text
TI Lithium-ion secondary battery constructed of low magnetic susceptibility materials
IN Leising, Randolph A.; Takeuchi, Esther S.; Spillman, David M.
PA Wilson Greatbatch Ltd., USA
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 989624	A1	20000329	EP 1999-307455	199909 21 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000100475	A	20000407	JP 1999-267119	199909 21 <--

PRAI US 1998-101175P P 19980921 <--
US 1998-211406 A 19981215 <--
AB A rechargeable alkali metal **electrochem. cell**, and preferably a lithium-ion secondary cell, constructed of low magnetic susceptibility materials, is described. The non-magnetic characteristics enable the secondary cell to be used within the confines of a magnetic resonance imaging system. A secondary **electrochem. cell** wherein the length and the width of the neg. electrode extend beyond the length and the width of the pos. electrode to provide the pos. electrode bounded by the neg. electrode. The neg. electrode active material includes graphite with specific characteristics.
IT **7440-32-6**, **Titanium**, uses
(**casing**; lithium-ion secondary battery constructed of low magnetic susceptibility materials)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M010-40
ICS H01M002-02; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT **Titanium** alloy
(**casing**; lithium-ion secondary battery constructed of
low magnetic susceptibility materials)
IT **7440-32-6**, **Titanium**, uses 11107-04-3
11109-50-5 11134-23-9 12611-86-8
(**casing**; lithium-ion secondary battery constructed of
low magnetic susceptibility materials)
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 7 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 132:224885 HCA Full-text
TI Hermetically sealed lithium ion secondary battery
IN Spillman, David M.; Gan, Hong; Takeuchi, Esther S.
PA Wilson Greatbatch Ltd., USA
SO Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 989623	A1	20000329	EP 1999-307454	199909 21 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6245464	B1	20010612	US 1998-211419	199812 15 <--
JP 2000100474	A	20000407	JP 1999-267114	199909 21 <--

PRAI US 1998-101218P P 19980921 <--
US 1998-211419 A 19981215 <--

AB A rechargeable alkali metal **electrochem. cell**, and preferably a lithium-ion secondary cell, constructed of low magnetic susceptibility materials, is described. The nonmagnetic characteristics enable the secondary cell to be used within the confines of a magnetic resonance imaging system. A secondary **electrochem. cell** wherein the length and width of the anode extend beyond the length and width of the cathode to provide the cathode bound by the anode.

IT **7440-32-6, Titanium**, uses
(**casing**; hermetically sealed lithium ion secondary battery)

RN 7440-32-6 HCA

CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M010-40
ICS H01M002-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT **Titanium** alloy
(**casing**; hermetically sealed lithium ion secondary battery)

IT **7440-32-6, Titanium**, uses 11107-04-3 11109-50-5 11134-23-9 12611-86-8
(**casing**; hermetically sealed lithium ion secondary battery)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 8 OF 17 HCA COPYRIGHT 2007 ACS on STN

AN 132:139849 HCA Full-text

TI Primary or secondary lithium battery useful in the vicinity of strong magnetic fields of a magnetic resonance imaging machine

IN Takeuchi, Esther S.

PA Wilson Greatbatch Ltd., USA

SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 980105	A1	20000216	EP 1999-306342	199908 11

<--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

JP 2000058132 A 20000225 JP 1999-223414 199908 06 <--

PRAI US 1998-132634 A 19980811 <--

AB An **electrochem. cell** that is useful in the vicinity of the strong magnetic fields of a magnetic resonance imaging machine is described. The cell can be a primary or a secondary system having lithium as an anode active material. A preferred couple is Li/CFx housed in a **titanium casing** with a **titanium** internal cell components.

IT **7440-32-6, Titanium**, uses
(**casing**; primary or secondary lithium battery useful in vicinity of strong magnetic fields of magnetic resonance imaging machine)

RN 7440-32-6 HCA

CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M002-02
ICS H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63

IT **7440-32-6, Titanium**, uses
(**casing**; primary or secondary lithium battery useful in vicinity of strong magnetic fields of magnetic resonance imaging machine)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 9 OF 17 HCA COPYRIGHT 2007 ACS on STN

AN 122:144914 HCA Full-text

TI Electrochemical procedures in the treatment of spent nuclear fuel

AU Forbicini, C. A. L. G. De O.; De Araujo, B. F.

CS Instituto Pesquisas Energeticas Nucleares, Comissao Nacional Energia Nuclear, Pinheiros, 05499, Brazil

SO Journal of Radioanalytical and Nuclear Chemistry (**1994**), 185(2), 331-46
CODEN: JRNCDM; ISSN: 0236-5731

PB Elsevier

DT Journal

LA English

AB The use of an electrochem. process for U/Pu partitioning has demonstrated a good performance and is a safe alternative for nuclear facilities. Its great advantages are the lack of introduction of foreign ions into the process and, esp., the minimization of the waste vol. generated. For the introduction of electrochem. U/Pu partitioning in the 2nd Pu purifn. cycle, preliminary studies were carried out with a single mixer-settler unit. Based on the results, an 8-stage electrolytic mixer-settler (M-S MIRELE) was designed. Ti was MIRELE's housing material (cathode) and Pt the anode, insulated with PTFE. The Pu recovery was >99%, indicating the efficiency of this equipment.

CC 71-5 (Nuclear Technology)
Section cross-reference(s): 72

IT **Electrolytic cells**
(decompn. of hydrazine in **electrochem. cell** for treatment of spent fuel)

IT Oxidation, electrochemical
(electrooxidn. in decompn. of hydrazine in **electrochem. cell** for treatment of spent fuel)

IT 7440-32-6, **Titanium**, uses
(cathode **housing** material of **titanium** for electrochem. mixer settler for treatment of spent fuel)

L19 ANSWER 10 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 104:26198 HCA Full-text
TI Lurgi chlorate cell, type 40-L
AU Kohl, Peter; Lohrberg, Karl
CS Fed. Rep. Ger.
SO DECHEMA Monographien (**1985**), 98(Tech. Elektrolysen), 379-87
CODEN: DMDGAG; ISSN: 0070-315X
DT Journal
LA German

AB The structural features and operating conditions of a new Lurgi chlorate **electrolysis cell** with activated Ti anodes and steel cathodes are described. During the development and design of these cells, great importance was attached to low consumption figures, long life and easy maintenance with regard to anode recoating. The energy consumption at 3 kA/m2 is as low as 4.8 MW-h/metric ton of NaClO3. The **Ti casing** ensures a service life of ≥15 yr. The anodes are bolted and have a min. transport vol.

CC 72-9 (Electrochemistry)

ST chlorate **electrolytic cell** brine **electrolysis**

IT **Electrolytic cells**
(for brine **electrolysis**, in sodium chlorate prodn.)

IT 7775-09-9P
(manuf. of, **electrolytic cell** for)

L19 ANSWER 11 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 98:43013 HCA Full-text
TI **Electrolysis cells**
IN Schmitt, Helmut; Strewe, Wolfgang; Schurig, Helmuth

PA Uhde G.m.b.H, Fed. Rep. Ger.
SO Ger. Offen., 10 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 3117483	A1	19821118	DE 1981-3117483	198105 02
		<--		
FI 8201390	A	19821103	FI 1982-1390	198204 21
		<--		
US 4392937	A	19830712	US 1982-372099	198204 26
		<--		
SE 8202617	A	19821103	SE 1982-2617	198204 27
		<--		
CA 1168620	A1	19840605	CA 1982-401926	198204 29
		<--		
ZA 8202962	A	19830330	ZA 1982-2962	198204 30
		<--		
FR 2504941	A1	19821105	FR 1982-7632	198205 03
		<--		
GB 2101632	A	19830119	GB 1982-12828	198205 04
		<--		
GB 2101632	B	19840418		

PRAI DE 1981-3117483 A 19810502 <--

AB A **electrolysis cell** with vertically arranged electrode packs is described. The electrolyte circulates through the cell in which are arranged the monopolar electrodes. The anodes are Ti and the cathodes steel and the assembly is contained in a durable **housing** e.g. **Ti.**

IC C25B009-00
CC 72-8 (Electrochemistry)
ST **electrolytic cell** monopolar electrode; titanium anode monopolar; steel cathode monopolar
IT **Electrolytic cells**
(with monopolar electrodes vertically arranged)

L19 ANSWER 12 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 93:194468 HCA Full-text
TI Electrolysis of alkali metal halides in a three-compartment cell with a pressurized buffer compartment
IN Balko, Edward N.; Coker, Thomas G.; Laconti, Anthony B.; McGray, George B.
PA General Electric Co., USA
SO U.S., 9 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 4214958	A	19800729	US 1979-38812	197905 14
			<--	
GB 2048946	A	19801217	GB 1980-13183	198004 22
			<--	
GB 2048946	B	19830427		
CA 1153729	A1	19830913	CA 1980-350523	198004 24
			<--	
DE 3017965	A1	19801120	DE 1980-3017965	198005 10
			<--	
FR 2456789	A1	19801212	FR 1980-10853	198005 14
			<--	
JP 56005990	A	19810122	JP 1980-62889	198005 14

<--

PRAI US 1979-38812 A 19790514 <--

AB In a 3 compartment membrane brine **electrolysis cell** with the anode and cathode phys. bonded to the permselective membranes, the buffer compartment is pressurized to maintain a pos. pressure differential with respect to the anode and cathode compartment feeds. In these cells with high cathodic current efficiency, low cell voltage, and flexible unitary electrode-membranes, electrolytes are forced outwardly against electronically conductive anode and cathode current collectors to provide uniform, const. and controllable contact between the bonded electrodes and thereby minimize ohmic loss. Improved cathodic efficiency is achieved with the lower caustic concn. in the buffer compartment than in the cathodic compartment which reduces the back migration of OH- to the anode compartment. Thus, a 3-compartment cell with a **Ti** anode **housing**, a Ni cathode, Nafion 042 as the anode membrane, and 1100 EW Nafion as the cathode membrane produced 8.8M NaOH in the buffer compartment with a cathodic current efficiency of 93% and anodic current efficiency of 91%.

IC C25B001-34; C25B009-00

INCL 204098000

CC 72-10 (Electrochemistry)
Section cross-reference(s): 49

ST pressurized buffer compartment brine electrolysis; brine **electrolysis** three compartment **cell**; buffer compartment brine electrolysis; sodium hydroxide chlorine electroprodn; membrane three compartment cell brine

IT **Electrolytic cells**
(diaphragm, 3-compartment, with pressurized buffer, for brine electrolysis)

IT 63496-24-2 65722-59-0 75035-18-6 75432-11-0 75432-12-1
(membrane, in 3-compartment **cell** for brine **electrolysis**)

IT 61261-18-5 63496-25-3
(membrane, laminated, for 3-compartment **electrolytic cells** for brines with pressurized buffer compartment)

L19 ANSWER 13 OF 17 HCA COPYRIGHT 2007 ACS on STN

AN 93:157883 HCA Full-text

TI Electrolysis of alkali metal halides in a three-compartment cell with self-pressurized buffer compartment

IN Balko, Edward N.; Coker, Thomas G.; LaConti, Anthony B.; McGray, George B.

PA General Electric Co., USA

SO U.S., 9 pp.
CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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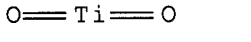
PI US 4212714 A 19800715 US 1979-38418
197905
14
<--
GB 2048947 A 19801217 GB 1980-13184
198004
22
<--
GB 2048947 B 19830427
CA 1153730 A1 19830913 CA 1980-350524
198004
24
<--
DE 3018231 A1 19801127 DE 1980-3018231
198005
13
<--
FR 2456788 A1 19801212 FR 1980-10851
198005
14
<--
JP 56005989 A 19810122 JP 1980-62888
198005
14
<--
PRAI US 1979-38418 A 19790514 <--
AB Brine is electrolyzed in a 3 compartment membrane cell having catalytic anodes and cathodes phys. bonded to the permselective membranes which divide the cell into 3 compartments. A **Ti** anode **housing** an a Ni cathode housing were sepd. by a 0.112 in. buffer frame of Kynar which had inlet and outlet ports fitted with stainless steel needle valves. The membranes were Nafion 042 and 1200 EW Nafion 120 for the anode and cathode, resp. The anode was (Ru-25% Ir)Ox and the cathode was Pt black both bonded with PTFE. The pressurization of the cell was accomplished without external pumping and pressurization in <30 min.
IC C25B001-16; C25B001-26; C25B013-08; C25B009-00
INCL 204098000
CC 72-10 (Electrochemistry)
Section cross-reference(s): 49
ST brine **electrolytic cell** self pressuration;
chlorine hydrogen sodium hydroxide electroprodn
IT Brines
(**electrolysis** of, **cell** for, with
self-pressurized buffer compartment)
IT **Electrolytic cells**
(for brine **electrolysis**, with self-pressurized buffer
compartment)
IT 1310-73-2P, preparation

(manuf. of, in brine **electrolysis, cell** for)
IT 61261-18-5 63346-31-6 75035-18-6
(membranes, in brine **electrolytic cells**)

L19 ANSWER 14 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 90:31153 HCA Full-text
TI Electrochemical reactor to be incorporated in an installation for producing **titanium dioxide** by the sulfate method from ilmenite
PA Battelle Memorial Institute, Switz.
SO Fr. Demande, 11 pp.
CODEN: FRXXBL
DT Patent
LA French
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI FR 2363642	A1	19780331	FR 1977-26558	197709 01
		<--		
FR 2363642	B1	19800620		
CH 610935	A5	19790515	CH 1976-11204	197609 03
		<--		
PRAI CH 1976-11204	A	19760903 <--		

AB An angular diaphragm cell, with an external fluid bed cathode of 1 to 2 mm graphite or Pb particles, was used to reduce Fe3+ to Fe2+ in the reaction liquor. A **Ti** or Pb cathode **current collector** contacted the particles. The tubular microporous diaphragm was made of either polyethylene, polypropylene, or ceramic material. A tubular Pb anode coated with either PbO2 or MnO2 was used in a H2SO4 electrolyte. The catholyte was pumped into the bottom of the cell compartment and out the top with sufficient velocity to fluidize and prevent fouling of the cathode particles by colloidal impurities from the ilmenite. Several cells, operated in series, were required to completely reduce the Fe3+.
IT **13463-67-7P**, preparation
(prodn. of, from ilmenite, **electrochem. cell** for)
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC C25B009-00
CC 72-8 (Electrochemistry)
Section cross-reference(s): 53
ST **titania** prodn ilmenite **electrolytic cell**
; iron redn **titania electrolytic cell**
IT Ceramic materials and wares
(diaphragm, in **electrolytic cell** for **titanium oxide** prodn. from ilmenite)
IT **Electrolytic cells**
(diaphragm, for **titanium oxide** prodn. from ilmenite)
IT 7439-92-1P, uses and miscellaneous
(anode, coated with oxides of lead or manganese, for **titanium oxide** prodn. from ilmenite)
IT 1309-60-0P 1313-13-9P, uses and miscellaneous
(coating, on lead anode, for **titanium oxide** prodn. from ilmenite)
IT 9002-88-4 9003-07-0
(diaphragm, in **electrolytic cell** for **titanium oxide** prodn. from ilmenite)
IT **13463-67-7P**, preparation
(prodn. of, from ilmenite, **electrochem. cell** for)
IT 7439-89-6P, reactions
(redn. of, electrochem., in **titanium oxide** prepn. from ilmenite in **electrochem. cell**)
IT 12168-52-4P
(**titanium oxide** electrochem. prodn. of, diaphragm cell for)

L19 ANSWER 15 OF 17 HCA COPYRIGHT 2007 ACS on STN
AN 77:13301 HCA Full-text
TI Anode assembly for an **electrolytic cell**
IN King, John Howliston; Smith, Frank
PA Imperial Chemical Industries Ltd.
SO Brit., 9 pp.
CODEN: BRXXAA
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI GB 1267985	A	19720322	GB 1969-43329	196909 02

<--

ZA 7005724	A	19720426	ZA 1970-5724	
			197008	
			19	
		<--		
US 3671415	A	19720620	US 1970-66034	
			197008	
			21	
		<--		
NL 7012910	A	19710304	NL 1970-12910	
			197009	
			01	
		<--		
FR 2060810	A5	19710618	FR 1970-31855	
			197009	
			01	
		<--		
JP 49037511	B	19741009	JP 1970-76431	
			197009	
			02	
		<--		

PRAI GB 1969-43329 A 19690902 <--

AB A permanent anode for electrolysis of alkali metal chloride solns. in Hg cathode cells consists of a horizontal, foraminated Ti sheet coated with the anode material. Current distribution is improved, compared with other permanent anode assemblies, by connecting the upper foraminate surface to an array of parallel rods which are connected to a rectangular bar; the fluid-tight **Ti casings** of the bar and rods are filled with a continuous Al core. The assembly can be connected to a bus bar outside the cell through the current lead-in member attached to the rectangular bar.

IC B01K; C22D

CC 77-10 (Electrochemistry)

ST anode alkali metal chloride electrolysis; titanium foraminated **electrolytic cell**; perforated titanium anode sheet

L19 ANSWER 16 OF 17 HCA COPYRIGHT 2007 ACS on STN

AN 66:6528 HCA Full-text

TI Electrical conductor

IN Atherton, Kenneth O.; Smith, Frank

PA Imperial Chemical Industries Ltd.

SO Brit., 8 pp.
CODEN: BRXXAA

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI GB 1045966 19661019 GB 1963-23016
196306
10
<--

AB Elec. conductors for use in corrosive conditions, e.g. **electrolysis cells**, can be made from hollow **Ti casings** which are treated internally with 20% HNO3 and 4% HF for 2-5 min. to remove oxide and then filled with molten Al, Zn, Sn, or their alloys by holding at 700-50° for 30 min. A core-Ti alloy is produced to give good elec. and mech. contact and the conductor is then cooled. The process is done in an inert atm. A suitable plant is described.

IC B01K

CC 71 (Electric Phenomena)

IT Corrosive substances
(anodes and conductors for, from titanium or **titanium** alloy **casings** contg. solidified alloys or metals)

IT Alloys, uses and miscellaneous
(anodes and conductors from titanium or **titanium** alloy **casing** contg. solidified, for corrosive conditions)

IT Anodes
(electrolytic, from titanium or **titanium** alloy **casings** contg. solidified alloys or metals for corrosive conditions)

IT Electric conductors
(titanium or **titanium** alloy **casings** contg. solidified alloys or metals for corrosive conditions)

IT 7429-90-5, uses and miscellaneous
(anodes and conductors from titanium or **titanium** alloy **casing** contg. solidified, for corrosive conditions)

L19 ANSWER 17 OF 17 HCA COPYRIGHT 2007 ACS on STN

AN 64:9329 HCA Full-text

OREF 64:1650a-b

TI Electrical conductor for **electrolytic cells**

IN Atherton, Kenneth O.; Smith, Frank

PA Imperial Chemical Industries Ltd.

SO 4 pp.

DT Patent

LA Unavailable

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI GB 1006396		19650929	GB 1963-23017	196306 10
BE 649028			BE	

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BE 649029 BE
BE 649030 BE
FR 1402203 FR
FR 1402204 FR

AB An electrode which is resistant to anodic corrosion and has good elec. cond. can be produced by the use of a **casing** made from **Ti** or suitable alloys incorporating Ti, around a core of a metal, such as Cu, Al, Fe, or steel. Metals which can be alloyed with Ti to produce the casing are Zr (≤14%), platinum metals, such as Pt, Rh, or Ir (≤5%), or Nb or Ta (≤10%). A good elec. connection between the casing and the core can be obtained by providing the surface of the Ti that is to face the core with an adherent coating of a solderable metal and soldering the core thereto.

IC B23K

CC 15 (Electrochemistry)

IT **Cells, electrolytic**
(elec. conductors for anodes in, from Ti soldered to metal core)

=> D L20 1-15 BIB ABS HITSTR HITIND

L20 ANSWER 1 OF 15 HCA COPYRIGHT 2007 ACS on STN

AN 146:10642 HCA Full-text

TI Current collector for lithium-sulfur **battery** comprising aluminium foil and aluminium oxide coat formed on the surface of aluminium foil, and lithium-sulfur **battery** containing the current collector

IN Cheon, Sang Eun; Choi, Su Suk; Choi, Yuns Uk; Han, Ji Seong; Kim, Hee Tak; Kim, Jan Dee; Kim, Seok; Park, Seung Hee

PA Samsung Sdi Co., Ltd., S. Korea

SO Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7

DT Patent

LA Korean

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI KR 2005030441	A	20050330 <--	KR 2003-66903	200309 26
PRAI KR 2003-66903		20030926 <--		

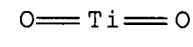
AB Provided are a current collector for a lithium-sulfur **battery** which inhibits the reactivity with a sulfur-based pos. electrode active material, and a lithium-sulfur **battery** contg. the current collector which is improved in discharge characteristics. The current collector comprises an aluminum foil; and an aluminum oxide coat formed on the surface of the aluminum foil. Preferably the aluminum oxide coat is formed by naturally oxidizing aluminum by using chem. or electrochem. etching method. Preferably the aluminum foil has a surface roughness to give a capacity of 10 μF/cm2 or more. Preferably a

transition metal, a metal oxide or a metal sulfide is added in the pore of the aluminum foil; the transition metal is at least one selected from the group consisting of Ti, Ni, Sn, Zn, Cu, Mo, Mn, Fe, V, Co, W, Cd, Au and Ag; the metal oxide is at least one selected from the group consisting of **TiO2**, MoOx (2<x<8), MnO2 and Al2O3; and the metal sulfide is at least one selected from the group consisting of Cu2S, FeS, NiS, Ag2S and MoS2.

IT **7440-32-6**, **Titanium**, uses **13463-67-7**, **Titanium oxide (TiO2)**, uses
(**current collector** for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur **battery** contg. current collector)

RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M004-64
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium sulfur **battery** aluminum oxide sulfide transition metal collector

IT Etching
(electrochem.; current collector for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur **battery** contg. current collector)

IT Transition metal oxides
Transition metal sulfides
Transition metals, uses
(in pores of aluminum foil; current collector for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur **battery** contg. current collector)

IT Secondary **batteries**
(lithium-sulfur; current collector for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur

battery contg. current collector)

IT Oxidation
(of aluminum surface; current collector for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur **battery** contg. current collector)

IT Surface roughness
(of foil; current collector for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur **battery** contg. current collector)

IT 1344-28-1, Aluminum oxide (Al2O3), uses
(coating on foil; current collector for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur **battery** contg. current collector)

IT 1313-13-9, Manganese oxide (MnO2), uses 1317-33-5, Molybdenum sulfide (MoS2), uses 1317-37-9, Iron sulfide (FeS) 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses **7440-32-6, Titanium**, uses 7440-33-7, Tungsten, uses 7440-43-9, Cadmium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses 11098-99-0, Molybdenum oxide **13463-67-7, Titanium oxide (TiO2)**, uses 16812-54-7, Nickel sulfide (NiS) 21548-73-2, Silver sulfide (Ag2S) 22205-45-4, Copper sulfide (Cu2S)
(**current collector** for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur **battery** contg. current collector)

IT 7429-90-5, Aluminum, uses
(foil; current collector for lithium sulfur **battery** comprising aluminum foil and aluminum oxide coat formed on surface of aluminum foil and lithium sulfur **battery** contg. current collector)

L20 ANSWER 2 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 141:426345 HCA Full-text
TI Electrode current collectors for lithium polymer **batteries**
IN Naarmann, Herbert; Kruger, Franz Josef
PA Dilo Trading A.-G., Switz.
SO Ger. Offen., 7 pp.
CODEN: GWXXBX
DT Patent

LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 10320860	A1	20041202	DE 2003-10320860	200305 09

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PRAI DE 2003-10320860 20030509 <--

AB A new procedure for the fabrication of elec. current collectors for electrodes of lithium **batteries** is presented. Adherent and stable elec. conducting layers of C are provided on the collector surfaces of the electrode using thermal plasma spraying. Coatings consist of C with thicknesses from 0,1 to 10 μm. A thicker C layer on the anode collector can also serve as anode.

IT **7440-32-6**, **Titanium**, uses **13463-67-7**, **Titanium oxide (TiO2)**, uses
(electrode **current collectors** for lithium polymer **batteries**)

RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)

IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium **battery** electrode current collector
IT Carbonates, uses
(alkyl, electrolyte solvent; electrode current collectors for lithium polymer **batteries**)
IT Electric current
(collector; electrode current collectors for lithium polymer **batteries**)
IT Electric contacts
(connectors; electrode current collectors for lithium polymer **batteries**)
IT Fluoropolymers, uses

(electrode current collectors for lithium polymer **batteries**)

IT Glycols, uses
(ethers, electrolyte solvent; electrode current collectors for lithium polymer **batteries**)

IT Ethers, uses
(glycol, electrolyte solvent; electrode current collectors for lithium polymer **batteries**)

IT Secondary **batteries**
(lithium; electrode current collectors for lithium polymer **batteries**)

IT Perfluoro compounds
(perfluoroalkyl ethers, electrolyte solvent; electrode current collectors for lithium polymer **batteries**)

IT Ethers, uses
(perfluoroalkyl, electrolyte solvent; electrode current collectors for lithium polymer **batteries**)

IT 7782-42-5, Graphite, uses
(MCMB; electrode current collectors for lithium polymer **batteries**)

IT 7440-44-0, Super P, uses
(activated; electrode current collectors for lithium polymer **batteries**)

IT 554-13-2, Lithium carbonate 1309-48-4, Magnesium oxide (MgO), uses 1310-65-2, Lithium hydroxide 1313-99-1, Nickel oxide (NiO), uses 1314-35-8, Tungsten oxide (WO3), uses 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses 7440-31-5, Tin, uses **7440-32-6**, **Titanium**, uses 7440-50-8, Copper, uses 7631-86-9, Silica, uses 11098-99-0, Molybdenum oxide 11104-61-3, Cobalt oxide 11118-57-3, Chromium oxide 11129-60-5, Manganese oxide 12033-56-6, Sulfur nitride (SN) 12057-24-8, Lithium oxide, uses **13463-67-7**, **Titanium oxide (TiO2)**, uses 24937-79-9, Kynar 761 25190-89-0, Dyneon THV 90076-65-6
(electrode **current collectors** for lithium polymer **batteries**)

IT 52627-24-4, Lithium cobalt oxide
(electrode; electrode current collectors for lithium polymer **batteries**)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 616-38-6, Dimethyl carbonate
(electrolyte contg.; electrode current collectors for lithium polymer **batteries**)

IT 21324-40-3, Lithium hexafluorophosphate (LiPF6) 244761-29-3, Lithium bisoxalato borate
(electrolyte; electrode current collectors for lithium polymer

batteries)

IT 9003-07-0, Celgard 2300
(film; electrode current collectors for lithium polymer **batteries**)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 3 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 140:306813 HCA Full-text
TI Lead-acid **battery** with cathode **current collector** containing **titanium oxide**
IN Kurisawa, Isamu
PA Japan Storage Battery Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004119061	A	20040415	JP 2002-277681	200209 24

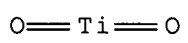
<--

PRAI JP 2002-277681 20020924 <--

AB The claimed **battery** is equipped with a corrosion-resistant conductive layer contg. Ta2O5-**TiO2** mixed oxide or Ti4O7 formed on a current collector in a cathode, where the cathode is compressed at 40-200 kPa. The **battery** provides high adhesion of the current collector with cathode active mass.

IT **13463-67-7, Titania**, uses
(**current collector**; corrosion-resistant conductive layer contg. Ta2O5-**TiO2** mixed oxide or Ti4O7 in cathode for lead-acid **battery**)

RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M004-66
ICS H01M004-68; H01M010-12

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST tantalum **titanium oxide** conductor cathode lead acid **battery**; corrosion resistant **titania** current collector cathode lead acid **battery**

IT **Battery** cathodes
Corrosion-resistant materials
(corrosion-resistant conductive layer contg. Ta2O5-**TiO2** mixed oxide or Ti4O7 in cathode for lead-acid **battery**)
IT Secondary **batteries**
(lead-acid; corrosion-resistant conductive layer contg. Ta2O5-**TiO2** mixed oxide or Ti4O7 in cathode for lead-acid **battery**)
IT 1314-61-0, Tantalum pentoxide 12143-55-4, **Titanium oxide** (Ti4O7) **13463-67-7**, **Titania**, uses 60866-78-6, Tantalum **titanium oxide**
(**current collector**; corrosion-resistant conductive layer contg. Ta2O5-**TiO2** mixed oxide or Ti4O7 in cathode for lead-acid **battery**)

L20 ANSWER 4 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 139:166968 HCA Full-text
TI Electrode current collectors for solid oxide fuel cells
IN Tao, Tao T.; Bai, Wei; Blake, Adam P.; Kwa, Jason K.; Wang, Gonghou
PA Celltech Power, Inc., USA
SO PCT Int. Appl., 92 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003067683	A2	20030814	WO 2003-US3642	200302 06 <--
WO 2003067683	A3	20040805		
AU 2003217336	A1	20030902	AU 2003-217336	200302

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

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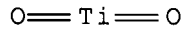
PRAI US 2002-354715P P 20020206 <--
US 2002-391626P P 20020626 <--
WO 2003-US3642 W 20030206 <--

AB Various aspects of the present invention relate to current collector arrangements and compns. in an electrochem. device. In an electrochem. device used to convert chem. energy via an electrochem. reaction into elec. energy, the elec. energy may be collected via a current collector of the present invention. The electrochem. device may be used anywhere that elec. energy is needed. Examples of electrochem. devices include a fuel cell and a **battery**; other examples include an oxygen purifier and an oxygen sensor. The current collector may include an elec. conducting core and an elec. connector. In certain embodiments, the elec. conducting core may be made out of a material able to withstand the operating conditions of the electrochem. app., which may include, for example, a liq. anode or cathode, or a reducing or oxidizing environment; in other embodiments, the elec. conducting core may be surrounded and protected from the operating conditions by one or more materials. In some embodiments, addnl. materials may be used to facilitate elec. communication within the device. For example, an interconnect able to withstand the operating conditions may be used to connect two or more cells within the device.

IT **13463-67-7, Titanium oxide**, uses
(electrode **current collectors** for solid oxide fuel cells)

RN 13463-67-7 HCA

CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72, 79

IT Coating materials
Erosion (wear)
Fuel cell electrodes
Gas sensors
Interconnections, electric
Secondary **batteries**
(electrode current collectors for solid oxide fuel cells)

IT 1305-78-8, Calcium oxide, uses 1312-43-2, Indium oxide 1312-81-8, Lanthanum oxide 1314-11-0, Strontium oxide, uses 1332-29-2, Tin oxide 1332-37-2, Iron oxide, uses 1344-28-1, Aluminum oxide, uses 7439-88-5, Iridium, uses 11104-61-3, Cobalt oxide 11118-57-3, Chromium oxide 11129-18-3, Cerium oxide 11129-60-5, Manganese oxide 12064-62-9, Gadolinium oxide 12627-00-8, Niobium oxide 12651-06-8, Samarium oxide **13463-67-7, Titanium oxide**, uses

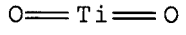
37200-34-3, Scandium oxide 110584-66-2, Calcium chromium lanthanum oxide Ca0.2CrLa0.8O3 111569-09-6, Scandium zirconium oxide
(electrode **current collectors** for solid oxide fuel cells)

IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-20-2, Scandium, uses 7440-24-6, Strontium, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-39-3, Barium, uses 7440-41-7, Beryllium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-65-5, Yttrium, uses 7440-67-7, Zirconium, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 11116-16-8, Titanium nitride 11130-73-7, Tungsten carbide 12007-23-7, Hafnium boride 12069-94-2, Niobium carbide 12070-08-5, Titanium carbide 12070-14-3, Zirconium carbide (ZrC) 12653-77-9, Niobium boride 12653-85-9, Tantalum boride 12673-91-5, Titanium boride 12705-37-2, Chromium nitride 12741-10-5, Zirconium boride 24304-00-5, Aluminum nitride 51184-16-8, Cerium yttrium oxide 51680-51-4, Tantalum carbide 55072-50-9, Lanthanum strontium **titanium oxide** 55575-02-5, Cerium gadolinium oxide 55575-06-9, Cerium samarium oxide 57285-40-2, Chromium lanthanum strontium oxide 57679-28-4, Calcium chromium lanthanum oxide 58834-07-4, Cerium niobium oxide 59707-46-9, Lanthanum manganese strontium oxide 64417-98-7, Yttrium zirconium oxide 107992-37-0, Silicon carbide (Si0-1C0-1) 119173-61-4, Zirconium nitride 132084-94-7, Niobium strontium **titanium oxide** 137633-21-7, Iron lanthanum strontium oxide 154769-61-6, Carbon nitride
(sheathing material; electrode current collectors for solid oxide fuel cells)

L20 ANSWER 5 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 131:325078 HCA Full-text
TI Primary or secondary electrochemical generator
IN Gratzel, Michael; Sugnaux, Francois R.; Pappas, Nicholas
PA Ecole Polytechnique Federale De Lausanne (Epfl) Sri, Switz.
SO PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9959218	A1	19991118	WO 1999-EP3261	199905 08

<--
W: CN, JP, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
EP 1086506 A1 20010328 EP 1999-932452 199905 08
<--
R: CH, DE, FR, GB, LI, NL, IE
PRAI EP 1998-810431 A 19980512 <--
WO 1999-EP3261 W 19990508 <--
AB A high power d. and high capacity primary or secondary electrochem. generator has at least one electrode composed of an elec. active solid material, the electrode having a mesoporous texture forming a bi-continuous junction of large sp. surface area with the electrolyte. The specific morphol. of the electroactive material permits high rates of ion insertion in the solid while allowing for rapid ion transport in electrolyte present in the porous space of the electrode. Specific methods for prepn. of the electrode are disclosed, in particular the control of the electrode morphol. by use of surfactant assemblies such as surfactant micelles exerting a templating effect during the chem. synthesis of the electroactive material.
IT **13463-67-7, Titania**, uses
(primary or secondary electrochem. generator)
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M004-48; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** electrode transition metal oxide chalcogenide
IT Primary **batteries**
Secondary **batteries**
(lithium; primary or secondary electrochem. generator)
IT **Battery** electrodes
(primary or secondary electrochem. generator)
IT **Titanium** alloy
(**current collector**; primary or secondary electrochem. generator)
IT 96-48-0 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 646-06-0, Dioxolane 1309-37-1, Iron oxide (Fe2O3), uses 1312-43-2, Indium oxide 1313-13-9, Manganese dioxide, uses 1313-27-5, Molybdenum trioxide, uses 1313-96-8, Niobium pentoxide 1314-35-8, Tungsten trioxide, uses 1314-62-1, Vanadium pentoxide,

uses 1317-33-5, Molybdenum sulfide mos2, uses 1317-61-9, Iron oxide (Fe3O4), uses 1738-36-9, Methoxyacetonitrile 2923-17-3, Lithium trifluoroacetate 11113-84-1, Ruthenium oxide 11126-12-8, Iron sulfide 11129-18-3, Cerium oxide 12039-13-3, Titanium disulfide 12055-23-1, Hafnium dioxide 12067-45-7, Titanium diselenide 12138-09-9, Tungsten sulfide ws2 12645-46-4, Iridium oxide **13463-67-7**, **Titania**, uses 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 26856-69-9, Methoxypropionitrile 28106-65-2, Tetrafluoropropanol 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 37245-92-4, Ruthenium sulfide 39300-70-4, Lithium nickel oxide 39457-42-6, Lithium manganese oxide 52627-24-4, Cobalt lithium oxide 59763-75-6, Tantalum oxide 66216-18-0 90076-65-6 131344-56-4, Cobalt lithium nickel oxide 131651-65-5, 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, lithium salt 132404-42-3 248588-09-2, Indium lithium manganese sodium oxide
(primary or secondary electrochem. generator)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 6 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 129:83406 HCA Full-text
TI Chemical flash lamp with discrete charges
AU Anon.
CS USA
SO Research Disclosure (**1998**), 409(May), P575-P576 (No. 40963)
CODEN: RSDSBB; ISSN: 0374-4353
PB Kenneth Mason Publications Ltd.
DT Journal; Patent
LA English

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 409063		19980510		

PRAI RD 1998-409063 **19980510**

AB The flash lamp includes a housing of high reflectivity defining cavity vol. 0.5-1.5 cm3 (preferably TiO2-contg. acrylic polymer coated with Al or electroless Ni), combustible masses at the bottom of the cavity, exhaust vents into a venting chamber in the center of the flash lamp array, a filter secured over the venting chamber (e.g., 2.5 mm FAO-5 bonded alumina), a primer cover (e.g., adhesive-backed 2 mil Al foil), and an enclosing transparent sheet (e.g., 1 mm thick glass) bonded to the housing with adhesive (e.g., epoxy or silicon rubber). The combustible masses (e.g., a mixt. of coarsely powd. Zr (-320 sieve), finely powd. Zr (5 μm dust), KClO4 oxidizer, and polyacrylamide binder dispersed in

water) may be ignited by an electrical or percussively fired igniter (e.g., Cu wire connected to a **battery** via elec. contacts.) A circular flash lamp array may be incorporated in a single use camera.

CC 50-8 (Propellants and Explosives)

IT Acrylic polymers, uses
(chem. flash lamp with acrylic polymer with **titanium** dioxide **housing**)

IT 13463-67-7, Titanium dioxide, uses
(chem. flash lamp with acrylic polymer with **titanium** dioxide **housing**)

L20 ANSWER 7 OF 15 HCA COPYRIGHT 2007 ACS on STN

AN 128:5758 HCA Full-text

TI Nonaqueous lithium **battery**

IN Sunderland, Walter C.; Rorvick, Anthony W.; Merritt, Donald R.; Schmidt, Craig L.; Haas, David P.

PA Medtronic, Inc., USA

SO PCT Int. Appl., 35 pp.
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9741608	A1	19971106	WO 1997-US7005	199704 25 <--
W: JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5716729	A	19980210	US 1996-638624	199604 26 <--
EP 910872	A1	19990428	EP 1997-925415	199704 25 <--
EP 910872	B1	20020116		
R: DE, FR				
US 6132896	A	20001017	US 1998-132183	199808 11 <--
PRAI US 1996-638624	A	19960426 <--		

WO 1997-US7005 W 19970425 <--
US 1997-882505 B1 19970625 <--

AB The **battery** has a cathode material formed into a pellet shape which expands as the **battery** is discharged. A cathode current collector circumferentially surrounds the cathode pellet and is in contact with the peripheral edge of the cathode pellet to prevent peripheral cathode expansion. The peripheral cathode current collector maintains a stable **battery** impedance during **battery** discharge. The **battery** may be used to power body-implantable devices such as heart pacemakers.

IT **7440-32-6, Titanium**, uses
(**housing** of nonaq. lithium **battery**)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M002-26
ICS H01M006-16
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63
ST lithium nonaq **battery** implantable device; heart pacemaker
nonaq lithium **battery**
IT Primary **batteries**
(lithium; nonaq. for body-implantable devices)
IT Heart
(pacemaker, artificial; nonaq. lithium **battery** for)
IT **7440-32-6, Titanium**, uses
(**housing** of nonaq. lithium **battery**)

L20 ANSWER 8 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 125:91277 HCA Full-text
TI **Titanium** suboxide-coated **current collector** for lead-acid **batteries** and its preparation
IN Fiorino, Mary E.; Valdes, Jorge L.
PA AT&T Corp., USA
SO U.S., 7 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5521029	A	19960528	US 1995-392441	199502

<-- EP 729195 A1 19960828 EP 1996-301152 199602 21 <-- EP 729195 B1 19990107 R: DE, FR, GB JP 08269791 A 19961015 JP 1996-33263 199602 21 <-- JP 3266489 B2 20020318

PRAI US 1995-392441 A 19950222 <--

AB A colloidal aq. dispersion of Ti suboxide particles is formed and its pH is adjusted to ≤3. The substrate to be coated and a pos. electrode are placed into the prepd. colloidal dispersion for electrophoretic deposition of the suboxide. The current collector substrate is selected from Pb and Pb alloy grids.

IC ICM H01M004-68
ICS H01M004-73

INCL 205150000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **battery** lead acid electrode grid; electrode grid
battery titanium suboxide coating

IT Electrodes
(**battery**, lead-acid; grids from titanium suboxide-coated)

IT Lead alloy, base
(**battery** electrode grids from titanium suboxide-coated)

IT 7439-92-1, Lead, uses
(**battery** electrode grids from titanium suboxide-coated)

IT 1335-25-7, Lead oxide 7429-90-5, Aluminum, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-67-7, Zirconium, uses
(**battery** electrode grids from titanium suboxide-coated)

IT 12065-98-4, **Titanium oxide** (Ti_5O_9) 12143-55-4, **Titanium oxide** (Ti_4O_7) 12143-56-5, **Titanium oxide** (Ti_6O_{11}) 12143-58-7, **Titanium oxide** (Ti_7O_{13}) 12143-59-8, **Titanium oxide** (Ti_8O_{15}) 12143-60-1, **Titanium oxide** (Ti_9O_{17})
(lead-acid **battery** electrode grids coated with)

L20 ANSWER 9 OF 15 HCA COPYRIGHT 2007 ACS on STN

AN 119:230162 HCA Full-text

TI Manufacture of sodium-sulfur **battery**

IN Tsuno, Nobuo; Kashiwaya, Toshikatsu

PA Ngk Insulators Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 05225962	A	19930903	JP 1992-25320	199202 12 <--
PRAI JP 1992-25320		19920212 <--		

AB The **battery** is manufd. by sepg. a cathode from an anode room with alkali ion-conductive solid electrolytes, placing molten S compds. in the cathode room, and placing molten Na in the anode room. In a metallic vessel for the cathode room, at least the surface in contact with the S compds. is chem. vapor deposited with a TiN layer. The TiN layer has high d. and corrosion resistance and is formed in short time.
IC ICM H01M002-02
ICS C23C016-34; H01M010-39
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST sodium sulfur secondary **battery**; titanium nitride coating cathode housing
IT Cathodes
(**battery**, sulfur, with **titanium** nitride-coated **housing**)
IT 25583-20-4, **Titanium** nitride
(cathode **housing** coated with, sodium-sulfur **battery**)

L20 ANSWER 10 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 119:184724 HCA Full-text
TI Design studies for advanced thermal **batteries**
AU Embrey, Janet; Williams, Mark; Press, Khushrow K.
CS SAFT Res. Dev. Cent., Cockeysville, MD, 21030, USA
SO Proceedings of the International Power Sources Symposium (**1992**), 35th, 231-5
CODEN: PIPSEG
DT Journal
LA English
AB Advanced thermal **batteries** developed for pulse loading and for use in a high-acceleration environment contain Ti or Ti alloy case material. The use of Ti as the case material improved the discharge life of the **batteries** at low temp., reduced the wt., and improved the sp. energy. The use of Ti in the lightwt. pulse **batteries** resulted in a 58% redn. of the hardware and a 24% overall wt. redn. of the **battery.**
IT **7440-32-6**, **Titanium**, uses

(**casing**, of thermal **batteries**, for extended discharge life at low temps. and wt. redn.)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST thermal **battery** design **titanium** alloy **casing**
IT **Batteries**, primary
(thermal, with **titanium casing**, for extended discharge life at low temps. and wt. redn.)
IT **Titanium** alloy, base
(**casing**, of thermal **batteries**, for extended discharge life at low temps. and wt. redn.)
IT **7440-32-6**, **Titanium**, uses
(**casing**, of thermal **batteries**, for extended discharge life at low temps. and wt. redn.)
IT 12743-70-3, Aluminum 6, titanium 90, vanadium 4
(thermal properties of, for casings for thermal **batteries**)

L20 ANSWER 11 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 114:27206 HCA Full-text
TI Manufacture of secondary solid-electrolyte **batteries**
IN Iwaki, Tsutomu; Moriwaki, Yoshio; Takada, Kanji; Yamamura, Koji
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 02114460	A	19900426	JP 1988-268442	198810 25 <--
PRAI JP 1988-268442			19881025 <--	

AB The **batteries** are prepd. by hot bonding a pair of electrode material-binder layers to the opposite sides of an electrolyte-binder layer and sealing the assembly in a **battery** case of thin metal-resin plates by melt bonding at the periphery of the assembly. Preferably, the electrode material is a Chevrel-type Cu

compd., the electrolyte is a Cu ion-conductive compd., esp. RbCu4IxCly, and the binder a thermoplastic polymer. The metal is selected from Al, Ca, Ni, stainless steel, and Ti; and the resin is polyolefin.

IC ICM H01M010-38
ICS H01M004-02; H01M004-04; H01M004-38; H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 56

ST solid electrolyte copper **battery** manuf; Chevrel type copper **battery** manuf; polyolefin sealing copper **battery**; aluminum casing copper **battery**; nickel casing copper **battery**; stainless steel casing copper **battery**; **titanium casing** copper **battery**

IT Alkenes, polymers
(polymers, binder and sealant, in secondary solid-electrolyte **battery** manuf.)

IT **Batteries**, secondary
(solid-electrolyte, copper molybdenum sulfide, manuf. of Chevryl-type)

IT 7429-90-5P, Aluminum, uses and miscellaneous 7440-02-0P, Nickel, uses and miscellaneous 7440-32-6P, Titanium, uses and miscellaneous 7440-50-8P, Copper, uses and miscellaneous 12597-68-1P, Stainless steel, uses and miscellaneous
(**batteries** with cases having plates of, solid-electrolyte Chevrel-type copper compd., manuf. of)

IT 9002-88-4, Polyethylene
(binder and sealant, in secondary solid-electrolyte **battery** manuf.)

IT 51912-50-6P, Copper molybdenum sulfide (Cu2Mo6S8)
(electrodes, **batteries** contg., manuf of)

IT 73379-32-5P, Copper rubidium chloride iodide (Cu4RbCl3.5I1.5)
(electrolyte, **batteries** contg., manuf. of)

L20 ANSWER 12 OF 15 HCA COPYRIGHT 2007 ACS on STN

AN 111:137484 HCA Full-text

TI New positive-electrode materials for lithium thin film secondary **batteries**

AU Meunier, G.; Dormoy, R.; Levasseur, A.

CS Lab. Chim. Solide, Ec. Natl. Super. Chim. Phys. Bordeaux, Talence, F-33405, Fr.

SO Materials Science & Engineering, B: Solid-State Materials for Advanced Technology (**1989**), B3(1-2), 19-23
CODEN: MSBTEK; ISSN: 0921-5107

DT Journal

LA English

AB Thin films of Ti oxysulfides (TiSxOy) were obtained by rf sputtering on Pt- or ITO-coated glass and used as intercalation cathodes in solid-state microbatteries with ternary sputtered oxide glass (B2O3-Li2O-Li2SO4) as electrolyte and evapd. Li as anode. The oxysulfide films were amorphous and hygroscopic; a homogeneous distribution of Ti, S, and O throughout the film was obsd. by SIMS profiling. More than 50 cycles were obtained at c.d. of ≤62 μA/cm2; the materials were chem. stable and no irreversible reactions occurred between electrode and electrolyte materials.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57, 72

ST titanium oxysulfide lithium intercalation cathode; lithium titanium oxisulfide **battery** stability; boron oxide glass electrolyte **battery**; glass electrolyte **battery** lithium sulfate; electrolyte **battery** lithium oxide glass

IT Cathodes
(**battery**, titanium oxysulfide, prepn. and lithium intercalation by, in microbattery with oxide glass electrolyte)

IT 122827-51-4P, **Titanium oxide** sulfide (TiO0.2S1.8) 122827-52-5P, **Titanium oxide** sulfide (TiO0.97S1.11) 122827-53-6P, **Titanium oxide** sulfide (**TiO2.**15S0.18) 122827-54-7P, **Titanium oxide** sulfide (TiO1.3S1.5) 122827-55-8P, **Titanium oxide** sulfide (TiO0.7S1.5) 122827-56-9P, **Titanium oxide** sulfide (TiO1.14S1.42)
(cathodes, prepn. and lithium intercalation by, in microbattery with oxide glass electrolyte)

IT 7440-06-4P, Platinum, uses and miscellaneous 50926-11-9P, ITO
(**current collectors, titanium** oxysulfide film cathode on, prepn. and lithium intercalation by, in microbattery with oxide glass electrolyte)

L20 ANSWER 13 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 101:195310 HCA Full-text
TI Rechargeable lithium/sulfur ammoniate **battery**
IN Bennett, John E.; Harney, David E.; Mitchell, Thomas A.
PA Diamond Shamrock Corp. , USA
SO U.S., 12 pp. Cont.-in-part of U.S. Ser. No. 210,739, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 4469761	A	19840904	US 1982-405882	198209 20

<--
CA 1177534 A1 19841106 CA 1981-389004
198110
29
<--
AU 8177775 A 19820603 AU 1981-77775
198111
23
<--
DK 8105217 A 19820527 DK 1981-5217
198111
24
<--
BR 8107621 A 19820824 BR 1981-7621
198111
24
<--
ZA 8108150 A 19821027 ZA 1981-8150
198111
24
<--
ES 507415 A1 19830601 ES 1981-507415
198111
24
<--
FI 8103782 A 19820527 FI 1981-3782
198111
25
<--
JP 57118374 A 19820723 JP 1981-189031
198111
25
<--
IL 64359 A 19841031 IL 1981-64359
198111
25
<--
PRAI US 1980-210739 A2 19801126 <--

AB The title ambient-temp. **battery** using an alkali or alk.-earth metal and S electrochem. pair comprises an anode of anhyd. liq., a catholyte contg. anhyd. S, and a cationic permeable separator. Thus, a **battery** prepd. with a liq. anode of anhyd. NH3 contg. Na, a catholyte of liq. anhyd. NH3 contg. S, and a Ti substrate cathode coated with a mixt. of Sn, Ti, and Ru oxides was repeatedly charged-discharged at charging voltage of 2.4-2.6 V and a discharging voltage of 2.0-1.5 V.

IT **13463-67-7**
(cathode **current collector** from
titanium coated with oxide mixt. contg., sulfur

battery, ambient-temp.)
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)

IC H01M010-44
INCL 429050000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST sodium sulfur ammoniate **battery**; lithium sulfur ammoniate **battery**; **battery** room temp lithium sulfur
IT **Batteries**, secondary
(lithium-sulfur, ambient-temp. ammoniate)
IT 7440-32-6, uses and miscellaneous
(cathode current collector from oxide-coated, sulfur **battery**, ambient-temp.)
IT 1332-29-2 11113-84-1 **13463-67-7**
(cathode **current collector** from **titanium** coated with oxide mixt. contg., sulfur **battery**, ambient-temp.)

L20 ANSWER 14 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 101:116696 HCA Full-text
TI Implantable titanium feedthrough reliability
AU Dixon, D. E.
CS Kyle Technol. Corp., Roseburg, OR, USA
SO SAMPE Journal (**1984**), 20(4), 31-4
CODEN: SAJUAX; ISSN: 0091-1062
DT Journal
LA English
AB Implantable Ti feedthrough reliability was characterized by hermetic integrity, optimum mech. design and crit. process requirements. Hermetic integrity of a Ti elec. feedthrough depended upon the coeffs. of linear thermal expansion (CLTE) of the Ti, the sealing material, the center conductor metal and upon the degree of bonding obtained at seal to metal interfaces. Microscopic examn. of the bond interface between Ti and the sealing material indicated fusion of the Ti oxide with a polycryst. ceramic. Dilatometer measurements of Ti, a polycryst. ceramic and pure Pt (center conductor metal) showed similar CLTE was less, assuring some degree of compression in the sealing mechanism. Optimum mech. design was detd. by thermal stress methods, which stressed designs through increasing thermal shocks until loss of hermeticity occurred to 50% or more of the sample population. Two designs, one with mech. reinforcement, the other without, were subjected to thermal shock ranges as severe as 755 K (900 F) to 78 K (-320 F). The plotted data indicated the design with mech. reinforcement sustained higher levels of thermal shock without loss of hermeticity. In vitro expts. on Ti feedthroughs with various surface configurations were conducted at low applied voltages (const. and pulse). Data indicated minimal electrochem. degrdn. at surfaces with max. elec. leakage paths obtained by addn. of

ceramic standoff. Electrochem. degrdn. was measured in terms of insulation resistance between the **Ti housing** and the Pt pin and correlated to accelerated **battery** depletion of a cardiac pulse generator. The **battery** life decreased rapidly as the elec. resistance across the Ti feedthrough decreased from 100,000 Ω. Certain levels of temp. affected grain size of Ti. Ti (grade 4) feedthrough housings were exposed to different temp. levels for the same 1 h duration. SEM photomicrographs verified by ASTM grain size detns. indicated substantial grain growth above the 1255 K (1800 F) temp. level. Conservative sealing conditions were recommended at less than the Ti beta transus temp., 1158 K (1625 F), and <1 h exposure.

CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 52

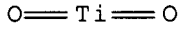
L20 ANSWER 15 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 97:185441 HCA Full-text
TI Electrodes for metal-bromine **batteries**
PA Meidensha Electric Mfg. Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 57121157	A	19820728	JP 1981-6642	198101 20 <--
JP 01057464	B	19891206		

PRAI JP 1981-6642 19810120 <--

AB A mixt. of a polyolefinic plastic 100, carbon black 20-45, and **Ti oxide** 8-12 parts is rolled to prep. cathode current collector for metal-Br **batteries.**

IT **13463-67-7**
(cathode current collector contg., bromine-metal **battery**
)
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC H01M004-96
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **titanium oxide** bromine **battery** cathode
IT Cathodes

(**battery**, **titanium oxide**-contg.
current collector for bromine-metal)
IT **13463-67-7**
(cathode current collector contg., bromine-metal **battery**
)
IT 7726-95-6, uses and miscellaneous
(cathodes, **battery**, **titanium oxide**
-contg. **current collector** for)

=> D L21 1-27 BIB ABS HITSTR HITIND

L21 ANSWER 1 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 142:319810 HCA Full-text
TI Spacer separator subassembly for implantable **electrochemical cells**
IN Aamodt, Paul B.
PA USA
SO U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005058895	A1	20050317	US 2003-661666	200309 12 <--
PRAI US 2003-661666			20030912 <--	

AB The separator subassembly includes a spacer layer formed from a film of microporous, non-conductive material joined to a separator by a heating process, wherein the separator is formed from an elongated piece of microporous, non-conductive film. When an anode subassembly is enveloped within the separator subassembly, the spacer aligns with a surface-mounted anode current collector of the alkali metal anode. The spacer serves as an addnl. protective layer between the cathode material and the anode current collector as the anode depletes.
IT **7440-32-6**, **Titanium**, uses
(**current collector**; spacer separator
subassembly for implantable **electrochem. cells**
)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M002-18
INCL 429142000; 429144000; 029623400
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63, 72
ST battery implantable spacer separator subassembly; **electrochem cell** implantable spacer separator subassembly
IT Medical goods
(implants; spacer separator subassembly for implantable **electrochem. cells**)
IT Primary batteries
(lithium; spacer separator subassembly for implantable **electrochem. cells**)
IT Battery anodes
Electric insulators
Primary batteries
Primary battery separators
(spacer separator subassembly for implantable **electrochem. cells**)
IT 7440-02-0, Nickel, uses **7440-32-6, Titanium**, uses 7440-50-8, Copper, uses
(**current collector**; spacer separator subassembly for implantable **electrochem. cells**)
IT 7439-93-2, Lithium, uses
(spacer separator subassembly for implantable **electrochem. cells**)

L21 ANSWER 2 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 142:319809 HCA Full-text
TI Lithium-limited anode subassembly for use in implantable **electrochemical cells**
IN Aamodt, Paul B.; Hokanson, Karl E.; Somdahl, Sonja K.; Schmidt, Craig L.; Viavattine, Joseph J.
PA USA
SO U.S. Pat. Appl. Publ., 24 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005058888	A1	20050317	US 2003-661909	

200309
12
<--
PRAI US 2003-661909 20030912 <--
AB An anode subassembly is provided for use in an implantable **electrochem. cell** wherein the anode subassembly includes an anode current collector designed to eliminate perforation edges in the final, outermost turn of a coiled electrode assembly. The anode current collector may be of a reduced size, discontinuous, or formed from alternating perforated and solid areas. The anode subassembly may further include reinforcing elements to support a thin anode layer in the outermost coil of a coiled, anode-limited cell. Reinforcing elements may take the form of a spacer, extensions extending from a reduced-size anode current collector, or strips of alkali metal.
IT **7440-32-6, Titanium**, uses
(**current collector**; lithium-limited anode subassembly for use in implantable **electrochem. cells**)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M004-70
ICS H01M004-66; H01M002-14
INCL 429094000; 429233000; 429129000; 429245000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63, 72
IT Medical goods
(implants; lithium-limited anode subassembly for use in implantable **electrochem. cells**)
IT Battery anodes
(lithium-limited anode subassembly for use in implantable **electrochem. cells**)
IT Primary batteries
(lithium; lithium-limited anode subassembly for use in implantable **electrochem. cells**)
IT 7440-02-0, Nickel, uses **7440-32-6, Titanium**, uses 7440-50-8, Copper, uses
(**current collector**; lithium-limited anode subassembly for use in implantable **electrochem. cells**)
IT 7439-93-2, Lithium, uses
(lithium-limited anode subassembly for use in implantable **electrochem. cells**)

L21 ANSWER 3 OF 27 HCA COPYRIGHT 2007 ACS on STN

AN 141:246144 HCA Full-text
TI Electrode having metal vanadium oxide nanoparticles for alkali metal-containing **electrochemical cells**
IN Takeuchi, Esther S.; Leising, Randolph; Rubino, Robert; Hong, Gan
PA Wilson Greatbatch Technologies, Inc., USA
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1460700	A2	20040922	EP 2004-251586	200403 19
			<--	
EP 1460700	A3	20050817		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
US 2004185346	A1	20040923	US 2003-391885	200303 19
CA 2460214	A1	20040919	CA 2004-2460214	200403 08
			<--	
JP 2004288633	A	20041014	JP 2004-79829	200403 19
			<--	

PRAI US 2003-391885 A 20030319 <--
AB A new cathode design having a second cathode active material of a relatively high energy d. but of a relatively low rate capability sandwiched between two current collectors with a first cathode active material having a relatively low energy d. but of a relatively high rate capability in contact with the opposite sides of the two current collectors, is disclosed. At least the first cathode active material is of particles having an av. diam. less than about 1 μm. The present cathode design is useful for powering an implantable medical device requiring a high rate discharge application.
IT **7440-32-6, Titanium**, uses
(**current collector**; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M004-02
ICS H01M004-36; H01M010-40; H01M004-48; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63, 72
IT Heart
(cardiac defibrillator; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Combustion
(chem. vapor deposition; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Vapor deposition process
(chem., combustion; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Carbonaceous materials (technological products)
(coating; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Battery cathodes
Decomposition
Drug delivery systems
Hydrothermal reactions
Nanoparticles
Sol-gel processing
(electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Alkali metals, uses
Carbon black, uses
Coke
Polyacetylenes, uses
Polyanilines
Polysulfides
(electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Bone
(healing implants; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Medical goods
(implantable; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)

IT Prosthetic materials and Prosthetics
(implants, artificial heart pacemaker; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Hearing
(implants; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Secondary batteries
(lithium; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Heart
(pacemaker, artificial; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Thermal decomposition
(photo-; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Conducting polymers
(polypyrroles; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT Conducting polymers
(polythiophenes; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT 7782-42-5, Graphite, uses
(coating; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses **7440-32-6, Titanium**, uses 7440-57-5, Gold, uses 12597-68-1, Stainless steel, uses
(**current collector**; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT 1310-65-2, Lithium hydroxide 7761-88-8, Silver nitrate, processes
(electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)
IT 108-32-7, Propylene carbonate 110-71-4, 1, 2-Dimethoxyethane 1313-13-9, Manganese dioxide, uses 1314-62-1, Vanadium oxide (V2O5), uses 1317-33-5, Molybdenum disulfide, uses 1317-37-9, Iron sulfide fes 1344-70-3, Copper oxide 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-66-6, Zinc, uses 7784-01-2, Silver chromate ag2cro4 7789-19-7, Copper fluoride (CuF2) 11105-02-5, Silver vanadium oxide 12019-06-6, Copper oxide (CuO2) 12031-65-1, Lithium nickel oxide linio2 12034-78-5,

Niobium selenide nbse3 12037-42-2, Vanadium oxide v6o13 12039-07-5, Titanium sulfide Tis 12068-85-8, Iron sulfide fes2 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide colio2 12789-09-2, Copper vanadium oxide 18282-10-5, Tin oxide sno2 20667-12-3, Silver oxide (Ag2O) 21324-40-3, Lithium hexafluorophosphate 21651-19-4, Tin oxide sno 22205-45-4, Copper sulfide cu2s 29935-35-1, Lithium hexafluoroarsenate 51311-17-2, CArbon fluoride 113443-18-8, Silicon oxide (SiO) 155645-82-2, Silver oxide ag2o2 181183-66-4, Copper Silver vanadium oxide 528841-14-7, Tin borate oxide phosphate
(electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)

IT 7439-93-2, Lithium, uses
(electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)

IT 7440-44-0, Carbon, uses
(glassy; electrode having metal vanadium oxide nanoparticles for alkali metal-contg. **electrochem. cells**)

L21 ANSWER 4 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 139:340084 HCA Full-text
TI Application and design of a high rate defibrillator lithium battery
IN Gan, Hong; Takeuchi, Esther S.
PA USA
SO U.S. Pat. Appl. Publ., 16 pp., Cont.-in-part of U.S. Ser. No. 809,404.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003207168	A1	20031106	US 2003-435232	200305 09 <--
US 7056358	B2	20060606		
US 2001044047	A1	20011122	US 2001-809404	200103 15 <--
US 6607861	B2	20030819		
PRAI US 2000-194840P	P	20000405 <--		
US 2001-809404	A2	20010315 <--		

AB A method for powering an implantable medical device with a lithium **electrochem. cell** having a sandwich cathode of SVO (silver vanadium oxide)/CFx/SVO active materials is disclosed. A preferred cathode is of a γ-SVO/CFx/SVO or (γ+ε)-SVO/CFx/(γ+ε)-SVO sandwich configuration.

IT **7440-32-6, Titanium**, uses
(**current collector**; application and design of high rate defibrillator lithium battery)

RN 7440-32-6 HCA

CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M010-44
ICS H01M004-54; H01M004-58

INCL 429050000; 429219000; 429231500; 429052000; 429231700

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63

IT 7429-90-5, Aluminum, uses 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses **7440-32-6, Titanium**, uses 7440-57-5, Gold, uses 11101-13-6 12597-68-1, Stainless steel, uses
(**current collector**; application and design of high rate defibrillator lithium battery)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 5 OF 27 HCA COPYRIGHT 2007 ACS on STN

AN 139:103814 HCA Full-text

TI Cathode active material coated with a metal oxide for incorporation into a lithium battery for an implantable cardiac defibrillator

IN Leising, Randolph; Takeuchi, Esther S.

PA USA

SO U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003138697	A1	20030724	US 2003-350384	200301 23

<--

CA 2417080 A1 20030724 CA 2003-2417080
200301
24
<--
EP 1331683 A2 20030730 EP 2003-1616
200301
24
<--
EP 1331683 A3 20050810
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
JP 2004039620 A 20040205 JP 2003-54923
200301
24
<--
PRAI US 2002-351947P P 20020124 <--
US 2003-350384 A 20030123 <--

AB An improved cathode material for nonaq. **electrolyte** lithium **electrochem. cell** is disclosed. The preferred active material is silver vanadium oxide (SVO) coated with a protective layer of an inert metal oxide (MxOy) or lithiated metal oxide (LixMyOz). The SVO core provides high capacity and rate capability while the protective coating reduces reactivity of the active particles with electrolyte to improve the long-term stability of the cathode.

IT **7440-32-6**, **Titanium**, uses
(**current collector**; cathode active material
coated with metal oxide for incorporation into lithium battery
for implantable cardiac defibrillator)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M004-48
ICS H01M004-50; H01M004-62; B05D005-12; H01M004-58; H01M004-54; H01M004-52; H01M004-66
INCL 429231100; 429231600; 429224000; 429245000; 429232000; 429328000; 429329000; 429330000; 429332000; 429333000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63
IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses **7440-32-6**, **Titanium**, uses 7440-57-5, Gold, uses 12597-68-1, Stainless steel, uses
(**current collector**; cathode active material

coated with metal oxide for incorporation into lithium battery for implantable cardiac defibrillator)

L21 ANSWER 6 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 139:9359 HCA Full-text
TI Carbon-coated **titanium current collectors** for use in alkali metal **electrochemical cells**
IN Paulot, William M.; Roy, Mark J.; Freitag, Gary L.; Frustaci, Dominick J.; Gan, Hong; Takeuchi, Esther S.
PA Wilson Greatbatch Technologies, Inc., USA
SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1320139	A2	20030618	EP 2002-257861	200211 14
			<--	
EP 1320139	A3	20050119		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CA 2412107	A1	20030514	CA 2002-2412107	200211 14
			<--	
US 2003118909	A1	20030626	US 2002-294260	200211 14
			<--	
US 6767670	B2	20040727		
JP 2004039610	A	20040205	JP 2002-369006	200211 14
			<--	
PRAI US 2001-332195P	P	20011114 <--		
US 2002-417248P	P	20021009 <--		

AB An alkali metal/solid cathode **electrochem. cell**, such as of a Li/SVO couple, having the cathode material supported on a **titanium current collector** screen coated with a carbonaceous material is described. The thus-coated **titanium current collector** provides the cell with higher rate capability in comparison to cells of a similar chem. having the cathode active material contacted to an uncoated **titanium current collector.**

IC ICM H01M004-66
ICS H01M010-40; H01M006-16; H01M004-08
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST battery carbon coated **titanium** cathode **current collector**
IT Battery cathodes
Coating materials
(carbon-coated **titanium current collectors** for use in alkali metal **electrochem. cells**)
IT Alkali metals, uses
Alkaline earth metals
Group IIIB elements
(carbon-coated **titanium current collectors** for use in alkali metal **electrochem. cells**)
IT Primary batteries
(lithium, Li/silver vanadium oxide; carbon-coated **titanium current collectors** for use in alkali metal **electrochem. cells**)
IT 108-32-7, Propylene carbonate 110-71-4 3459-92-5, Dibenzyl carbonate 7439-93-2, Lithium, uses 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses 11105-02-5, Silver vanadium oxide 12798-95-7 29935-35-1, Lithium hexafluoroarsenate 181183-66-4, Copper Silver vanadium oxide
(carbon-coated **titanium current collectors** for use in alkali metal **electrochem. cells**)
IT 7440-44-0, Carbon, uses
(carbon-coated **titanium current collectors** for use in alkali metal **electrochem. cells**)
IT 7782-42-5, Graphite, uses
(pigment; carbon-coated **titanium current collectors** for use in alkali metal **electrochem. cells**)

L21 ANSWER 7 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 138:324157 HCA Full-text
TI Noble metals coated on **titanium current collectors** for use in nonaqueous Li/CFx batteries
IN Takeuchi, Ester S.; Platt, Bruce; Smesko, Sally Ann; Ziarniak, Eric; Roy, Mark
PA Wilson Greatbatch Technologies, Inc., USA
SO Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW

DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1309023	A2	20030507	EP 2002-257617	200211 04
		<--		
EP 1309023	A3	20031029		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
US 2003124427	A1	20030703	US 2002-286726	200211 01
		<--		
US 7005214	B2	20060228		
CA 2411087	A1	20030502	CA 2002-2411087	200211 04
		<--		
JP 2004039609	A	20040205	JP 2002-358720	200211 05
		<--		
US 2006141340	A1	20060629	US 2006-307893	200602 27
		<--		

PRAI US 2001-335353P P 20011102 <--
US 2002-286726 A 20021101 <--

AB A lithium/fluorinated carbon **electrochem. cell** having the CFx material supported on a **titanium current collector** screen sputter coated with a noble metal is described. The gold, iridium, palladium, platinum, rhodium and ruthenium-coated **titanium current collector** provides the cell with higher rate capability, even after exposure to high temps., in comparison to cells of a similar chem. having the CFx contacted to a **titanium current collector** painted with a carbon coating.

IC ICM H01M004-66
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium carbon fluoride battery current collector; noble metal coated **titanium current collector** battery
IT Atomizing (spraying)
(acoustic; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)

IT Vapor deposition process
(chem.; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Noble metals
(coating; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Coating process
(dip; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Coating process
(flame-spraying; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Primary batteries
(lithium; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Atomizing (spraying)
Battery cathodes
Coating materials
Electrolysis
Sputtering
(noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Coating process
(painting; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Vapor deposition process
(phys.; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Coating process
(plasma spraying; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT Coating process
(thermal spraying; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)
IT 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-57-5, Gold, uses
(coating; noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)

IT 96-48-0, γ-Butyrolactone 1313-13-9, Manganese dioxide, uses
1344-70-3, Copper oxide 7439-93-2, Lithium, uses 7440-02-0,
Nickel, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses
7440-33-7, Tungsten, uses 7440-50-8, Copper, uses 11105-02-5,
Silver vanadium oxide 11115-78-9, Copper sulfide 11126-12-8,
Iron sulfide 12039-13-3, Titanium sulfide (TiS2) 12068-85-8,
Iron sulfide fes2 12789-09-2, Copper vanadium oxide 14283-07-9,
Lithium tetrafluoroborate 39300-70-4, Lithium nickel oxide
51311-17-2, Carbon fluoride 52627-24-4, Cobalt lithium oxide
181183-66-4, Copper Silver vanadium oxide
(noble metals coated on **titanium current collectors** for use in nonaq. Li/CFx batteries)

L21 ANSWER 8 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 138:190724 HCA Full-text
TI Set of collector plates for fuel **cells** or other **electrochemical cells** and method for producing such collector plates
IN Sibum, Heinz
PA Deutsche Titan GmbH, Germany
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003017400	A1	20030227	WO 2002-EP8511	200207 31 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 10139799	A1	20030306	DE 2001-10139799	200108 14 <--

DE 10139799 B4 20050630
AU 2002355979 A1 20030303 AU 2002-355979
200207
31
<--
EP 1417723 A1 20040512 EP 2002-794738
200207
31
<--
EP 1417723 B1 20070228
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
AT 355622 T 20060315 AT 2002-794738
200207
31
<--
PRAI DE 2001-10139799 A 20010814 <--
WO 2002-EP8511 W 20020731 <--

AB The invention relates to a set of collector plates for fuel **cells** or other **electrochem. cells**, and to a method for producing the same. The **collector** plates consist of **Ti** and comprise **current collectors** which are arranged in an elec. parallel manner. The current collectors have a Cu-Ti alloy on the contact surfaces; the alloy forms a homogeneous constituent of the Ti material of the plates. The collector plates are light and resistant to electrolytes; elec. current can drawn from the current collectors without a high transition resistance.

IT **7440-32-6, Titanium**, uses
(**current collector** plates for fuel
cells or other **electrochem. cells**)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M004-66
ICS H01M008-02; C23C010-04; C23C030-00
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT **7440-32-6, Titanium**, uses 39412-26-5
(**current collector** plates for fuel
cells or other **electrochem. cells**)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 9 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 136:376264 HCA Full-text
TI Electrochemical characteristics of LiNi0.5Mn1.5O4 cathodes with

Ti or Al **current collectors**

AU Kanamura, Kiyoshi; Hoshikawa, Wataru; Umegaki, Takao
CS Department of Applied Chemistry, Graduate School of Engineering, Tokyo Metropolitan University, Tokyo, 192-0397, Japan

SO Journal of the Electrochemical Society (**2002**), 149(3), A339-A345
CODEN: JESOAN; ISSN: 0013-4651
PB Electrochemical Society
DT Journal
LA English

AB LiNi0.5Mn1.5O4 was prepd. and tested as a cathode material with 5 V operation cell voltage. When using **Ti** mesh **current collector**, this cathode material did not exhibit good performance, due to the corrosion of **Ti** mesh **current collector.** On the other hand, LiNi0.5Mn1.5O4 material showed the excellent rechargeability and relatively high discharge capacity when using an Al current collector. A coin-type cell was also constructed to test the practical stability of this cathode material. The discharge capacity was 120 mAh g-1 and the rechargeability was 100% during 30 cycles. The av. discharge potential was 4.8 V vs. Li/Li+. This electrochem. behavior was much better than LiMn2O4 and LiCoO2. Moreover, the 100% cycleability of this material indicates that the electrolyte decompn. does not take place on this cathode material.

CC 72-2 (Electrochemistry)
Section cross-reference(s): 52, 57, 76
ST lithium manganese nickel oxide cathode **titanium** aluminum **current collector**

IT Electric potential
(av. discharge potential of LiNi0.5Mn1.5O4 cathodes with **Ti** or Al **current collectors**)
IT Electric charge
(charge-discharge cyclability of LiNi0.5Mn1.5O4 cathodes with **Ti** or Al **current collectors**)
IT Cathodes
Electric capacitance
Electric impedance
X-ray spectra
(electrochem. characteristics of LiNi0.5Mn1.5O4 cathodes with **Ti** or Al **current collectors**)
IT Secondary batteries
(electrochem. characteristics of LiNi0.5Mn1.5O4 cathodes with **Ti** or Al **current collectors** for)
IT 12031-75-3P, Lithium manganese nickel oxide (Li2Mn3NiO8)
(electrochem. characteristics of LiNi0.5Mn1.5O4 cathodes with **Ti** or Al **current collectors**)
IT 7429-90-5, Aluminum, uses 7440-32-6, Titanium, uses
(electrochem. characteristics of LiNi0.5Mn1.5O4 cathodes with **Ti** or Al **current collectors**)
IT 7439-93-2, Lithium, uses
(electrochem. characteristics of LiNi0.5Mn1.5O4 cathodes with

Ti or Al **current collectors** in **electrolytic cell** with anode from)

IT 96-49-1, Ethylene carbonate 623-53-0, Ethylmethyl carbonate 21324-40-3, Lithium hexafluorophosphate
(electrochem. characteristics of LiNi0.5Mn1.5O4 cathodes with **Ti** or Al **current collectors** in **electrolytic cell** with **electrolyte** contg.)

IT 1310-65-2, Lithium hydroxide 1313-99-1, Nickel oxide NiO, reactions 1317-35-7, Manganese oxide Mn3O4
(use for prepn. of LiNi0.5Mn1.5O4 cathodes with **Ti** or Al **current collectors**)

RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 10 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 136:372302 HCA Full-text
TI Sandwich cathode design using chemically similar active materials for alkali metal **electrochemical cells**
IN Gan, Hong; Takeuchi, Esther S.
PA Wilson Greatbatch Ltd., USA
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 6

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1207570	A2	20020522	EP 2001-127531	200111 18
			<--	
EP 1207570	A3	20050817		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2002198061	A	20020712	JP 2001-349778	200111 15
			<--	
US 2002098411	A1	20020725	US 2001-884	200111 15
			<--	
US 6743550	B2	20040601		
CA 2363165	A1	20020517	CA 2001-2363165	

			200111
			16
		<--	
JP 2002198035	A	20020712	JP 2001-351632
			200111
			16
		<--	
JP 2002203607	A	20020719	JP 2001-351633
			200111
			16
		<--	
JP 2002237334	A	20020823	JP 2001-390626
			200111
			16
		<--	
JP 2002270162	A	20020920	JP 2001-390625
			200111
			16
		<--	
JP 2002237310	A	20020823	JP 2001-395430
			200111
			19
		<--	

PRAI US 2000-249688P P 20001117 <--
US 2001-884 A 20011115 <--

AB The invention relates to a new sandwich cathode design having 2 cathode active materials provided on opposite sides of a current collector. The resp. active materials are similar in terms of, e.g., their rate capability, their energy d., or some other parameter. However, one material may have an advantage over the other in one characteristic, but is disadvantageous in another. The cathode is built in a sandwich configuration having a first one of the active materials sandwiched between 2 current collectors. Then, the second active material is provided in contact with at least the other side of one of the current collectors, and preferably facing the anode. An example of the cathode has the configuration: MnO2/current collector/silver vanadium oxide/current collector/MnO2.

IT **7440-32-6**, **Titanium**, uses
(**current collector**; sandwich cathode design
using chem. similar active materials for alkali metal
electrochem. cells)

RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M004-02
ICS H01M004-06; H01M004-36; H01M004-48; H01M006-16; H01M004-66

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63

IT Prosthetic materials and Prosthetics
(implants, artificial heart pacemaker; sandwich cathode design using chem. similar active materials for alkali metal **electrochem. cells**)

IT Heart
(pacemaker, artificial; sandwich cathode design using chem. similar active materials for alkali metal **electrochem. cells**)

IT Battery cathodes
Primary batteries
(sandwich cathode design using chem. similar active materials for alkali metal **electrochem. cells**)

IT Alkali metals, uses
(sandwich cathode design using chem. similar active materials for alkali metal **electrochem. cells**)

IT 7439-88-5, Iridium, uses 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 12645-46-4, Iridium oxide
(current collector coated with; sandwich cathode design using chem. similar active materials for alkali metal **electrochem. cells**)

IT 7429-90-5, Aluminum, uses 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses **7440-32-6, Titanium**, uses 7440-57-5, Gold, uses 11101-13-6 12597-68-1, Stainless steel, uses
(**current collector**; sandwich cathode design using chem. similar active materials for alkali metal **electrochem. cells**)

IT 67-68-5, Dmso, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 79-20-9, Methyl acetate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-29-2, γ-Valerolactone 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 111-96-6, Diglyme 112-49-2, Triglyme 127-19-5, Dimethyl acetamide 143-24-8, Tetraglyme 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 872-50-4, uses 1313-13-9, Manganese dioxide, uses 2923-17-3 4437-85-8, Butylene carbonate 5137-45-1, 1-Ethoxy-2-methoxyethane 7439-93-2, Lithium, uses 7791-03-9, Lithium perchlorate 11105-02-5, Silver vanadium oxide 12057-24-8, Lithia, uses 13453-75-3, Fluorosulfuric acid, lithium salt 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate

21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate, uses 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 115028-88-1 132404-42-3
(sandwich cathode design using chem. similar active materials for alkali metal **electrochem. cells**)

L21 ANSWER 11 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 136:372299 HCA Full-text
TI Sandwich cathode design for alkali metal **electrochemical cells** having circuit safety characteristics
IN Gan, Hong; Takeuchi, Esther S.
PA Wilson Greatbatch Ltd., USA
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 6

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1207567	A2	20020522	EP 2001-127228	200111 16
		<--		
EP 1207567	A3	20050810		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002090551	A1	20020711	US 2001-969389	200110 02
		<--		
US 6692871	B2	20040217		
CA 2361030	A1	20020517	CA 2001-2361030	200111 05
		<--		
JP 2002198061	A	20020712	JP 2001-349778	200111 15
		<--		
JP 2002198035	A	20020712	JP 2001-351632	200111 16
		<--		
JP 2002203607	A	20020719	JP 2001-351633	

				200111
				16
		<--		
JP 2002237334	A	20020823	JP 2001-390626	
				200111
				16
		<--		
JP 2002270162	A	20020920	JP 2001-390625	
				200111
				16
		<--		
JP 2002237310	A	20020823	JP 2001-395430	
				200111
				19
		<--		

PRAI US 2000-249688P P 20001117 <--
US 2001-969389 A 20011002 <--

AB A new sandwich cathode design has a first cathode active material of a relatively low energy d. but of a relatively high rate capacity sandwiched between 2 current collectors and with a second cathode active material having a relatively high energy d. but of a relatively low rate capability in contact with the opposite sides of the 2 current collectors. The cathode design is relatively safer under short circuit and abuse conditions than the cells having a cathode material of a relatively high energy d. but a relatively low rate capability alone. A preferred cathode is: CFx/current collector/SVO/current collector/CFx. The SVO provides the discharge end of life indication since CFx and SVO cathode cells discharge under different voltage profiles. This is useful as an end-of-replacement indicator for an implantable medical device, such as cardiac pacemaker.

IT **7440-32-6**, **Titanium**, uses
(**current collector**; sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M004-02
ICS H01M004-06; H01M004-36; H01M006-16
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63
IT Medical goods
(implantable; sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)
IT Prosthetic materials and Prosthetics

(implants, artificial heart pacemaker; sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)

IT Heart
(pacemaker, artificial; sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)

IT Battery cathodes
Primary batteries
Safety
(sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)

IT Alkali metals, uses
(sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)

IT 7439-88-5, Iridium, uses 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 12645-46-4, Iridium oxide
(current collector coated with; sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)

IT 7429-90-5, Aluminum, uses 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses **7440-32-6, Titanium**, uses 7440-57-5, Gold, uses 12597-68-1, Stainless steel, uses
(**current collector**; sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)

IT 1313-13-9, Manganese dioxide, uses 1314-62-1, Vanadium oxide (V2O5), uses 1317-37-9, Iron sulfide Fes 1344-70-3, Copper oxide 7439-93-2, Lithium, uses 7784-01-2, Silver chromate 11101-13-6 11105-02-5, Silver vanadium oxide 12019-06-6, Copper oxide (CuO2) 12031-65-1, Lithium nickel oxide linio2 12039-13-3, Titanium sulfide (TiS2) 12068-85-8, Iron sulfide Fes2 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide colio2 12789-09-2, Copper vanadium oxide 13478-41-6, Copper fluoride cuf 20667-12-3, Silver oxide ag2o 22205-45-4, Copper sulfide cu2s 51311-17-2, Carbon fluoride 155645-82-2, Silver oxide ag2o2
(sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)

IT 67-68-5, Dmso, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 79-20-9, Methyl acetate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-29-2, γ-Valerolactone 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 111-96-6, Diglyme 112-49-2, Triglyme 127-19-5, Dimethyl acetamide 143-24-8, Tetraglyme 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1,

Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 872-50-4, uses 2923-17-3 4437-85-8, Butylene carbonate 5137-45-1, 1-Ethoxy-2-methoxyethane 7791-03-9, Lithium perchlorate 13453-75-3, Fluorosulfuric acid, lithium salt 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9 35363-40-7, Ethyl propyl carbonate, uses 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 115028-88-1 132404-42-3 181183-66-4, Copper silver vanadium oxide 195144-63-9, Lithium oxide lio2
(sandwich cathode design for alkali metal **electrochem. cells** having circuit safety characteristics)

L21 ANSWER 12 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 136:28082 HCA Full-text
TI High-efficiency water **electrolytic cells** possessing metallic fiber-made current collectors
IN Hirai, Kiyoshi; Toriu, Shingo; Toyoshima, Manabu
PA Shinko Pantec Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001342587	A	20011214	JP 2001-87587	200103 26
				<--
PRAI JP 2000-88768	A	20000328		<--

AB The cells employ pair of current collectors where each collector is composed of inner and outer parts and the inner parts, contacting to solid electrolytic membranes, satisfy surface roughness (Ra) of 0.1-10 μm and the outer parts satisfy porosity of ≥40%. The cells achieve high energy efficiency while suppressing damage in solid electrolytic membranes.
IT **7440-32-6, Titanium**, uses
(fibers, **current collectors**; high-efficiency water **electrolytic cells** possessing metallic fiber-made current collectors)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM C25B011-03
ICS C25B009-00; C25B011-02; C25B011-10; C25B013-02
CC 72-3 (Electrochemistry)
Section cross-reference(s): 40, 56
ST water **electrolytic cell** metallic fiber current collector; **titanium current collector** roughness porosity **electrolytic cell**; efficiency service life water **electrolysis cell**
IT **Electrolytic cells**
Porosity
Surface roughness
(high-efficiency water **electrolytic cells** possessing metallic fiber-made current collectors)
IT Metallic fibers
(stainless steel, current collectors; high-efficiency water **electrolytic cells** possessing metallic fiber-made current collectors)
IT Metallic fibers
(**titanium**, **current collectors**; high-efficiency water **electrolytic cells** possessing metallic fiber-made current collectors)
IT 7732-18-5, Water, miscellaneous
(electrolysis; high-efficiency water **electrolytic cells** possessing metallic fiber-made current collectors)
IT 66796-30-3, Nafion 117
(electrolytic membranes; high-efficiency water **electrolytic cells** possessing metallic fiber-made current collectors)
IT **7440-32-6**, **Titanium**, uses 12597-68-1, Stainless steel, uses
(fibers, **current collectors**; high-efficiency water **electrolytic cells** possessing metallic fiber-made current collectors)

L21 ANSWER 13 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 135:95192 HCA Full-text
TI Current collector for lithium electrode
IN Howard, William G.
PA Medtronic, Inc., USA
SO U.S. Pat. Appl. Publ., 33 pp., Cont.-in-part of U. S. 6,051,038.
CODEN: USXXCO
DT Patent

LA English
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2001008725	A1	20010719	US 1998-67208	199804 28 <--
US 6893772	B2	20050517		
US 5439760	A	19950808	US 1993-155410	199311 19 <--
JP 11204115	A	19990730	JP 1998-283275	199411 21 <--
US 6051038	A	20000418	US 1995-430532	199504 27 <--
US 6159253	A	20001212	US 1998-67187	199804 27 <--
US 6232012	B1	20010515	US 1998-67600	199804 28 <--
DE 19858723	A1	19990805	DE 1998-19858723	199812 18 <--
US 2006210880	A1	20060921	US 2006-343320	200601 31 <--

PRAI US 1993-155410 A3 19931119 <--
US 1995-430532 A2 19950427 <--
US 1998-72223P P 19980107 <--
JP 1994-311187 A3 19941121 <--
US 1998-67208 A 19980428 <--

AB An **electrochem. cell** and corresponding electrode assembly are disclosed in which an alkali metal anode and a cathode assembly are wound together in a unidirectional winding having substantially straight sides such that the winding will fit into a prismatic cell. The anode and cathode are preferably

arranged in the winding to provide for even utilization of reactive material during cell discharge by placing cathode and anode material in close proximity throughout the electrode assembly in the proportions in which they are utilized. An anode current collector having a length or height shorter than at least one of the length or height of the cathode current collector or alkali metal strips operatively assocd. with the anode current collector is also described.

IT **7440-32-6, Titanium**, uses
(**current collector** for lithium electrode)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M002-26
ICS H01M004-54; H01M004-62; H01M002-18
INCL 429094000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 7440-02-0, Nickel, uses **7440-32-6, Titanium**,
uses 7440-50-8, Copper, uses 11105-02-5, Silver vanadium oxide
(**current collector** for lithium electrode)
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 14 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 134:103344 HCA Full-text
TI Method for reducing voltage delay in an alkali metal **electrochemical cell** activated with a nonaqueous electrolyte having a sulfate additive
IN Gan, Hong; Takeuchi, Esther S.
PA Wilson Greatbatch Ltd., USA
SO U.S., 13 pp., Cont.-in-part of U.S. 6,013,394.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 6

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 6180283	B1	20010130	US 1999-460035	199912 13
		<--		
US 6013394	A	20000111	US 1998-9557	199801 20

<--
US 6265106 B1 20010724 US 2000-491355
200001
26
<--
US 6350546 B1 20020226 US 2000-519534
200003
06
<--
CA 2316438 A1 20010613 CA 2000-2316438
200008
18
<--
EP 1109244 A2 20010620 EP 2000-311118
200012
13
<--
EP 1109244 A3 20020724
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
JP 2001176548 A 20010629 JP 2000-378551
200012
13
<--
TW 478201 B 20020301 TW 2000-89126603
200012
13
<--
US 2001006751 A1 20010705 US 2001-772680
200101
30
<--
US 6444360 B2 20020903
PRAI US 1998-9557 A 19980120 <--
US 1999-460035 A2 19991213 <--
US 2000-491355 A2 20000126 <--
US 2000-519534 A 20000306 <--
OS MARPAT 134:103344

AB An alkali metal, solid cathode, nonaq. **electrochem. cell** capable of delivering high current pulses, rapidly recovering its open circuit voltage and having high current capacity, is disclosed. The stated benefits are realized by the addn. of at least one org. sulfate additive to an electrolyte comprising an alkali metal salt dissolved in a mixt. of a low viscosity solvent and a high permittivity solvent. A preferred solvent mixt. includes propylene carbonate, dimethoxyethane and a sulfate additive having at least one unsatd. hydrocarbon contg. a C(sp2 or sp3)-C(sp3) bond unit having the C(sp3) carbon directly connected to the -OSO3- functional group, or an silyl sulfate or a tin sulfate.

IT **7440-32-6, Titanium**, uses

(**current collector**; method for reducing
voltage delay in alkali metal **electrochem. cell**
activated with nonaq. electrolyte having sulfate additive)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M004-60
INCL 429215000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT Fluoropolymers, uses
(binder; method for reducing voltage delay in alkali metal
electrochem. cell activated with nonaq.
electrolyte having sulfate additive)
IT Primary batteries
(lithium; method for reducing voltage delay in alkali metal
electrochem. cell activated with nonaq.
electrolyte having sulfate additive)
IT Battery electrolytes
(method for reducing voltage delay in alkali metal
electrochem. cell activated with nonaq.
electrolyte having sulfate additive)
IT Esters, uses
Lactams
Lactones
(method for reducing voltage delay in alkali metal
electrochem. cell activated with nonaq.
electrolyte having sulfate additive)
IT Carbon black, uses
(method for reducing voltage delay in alkali metal
electrochem. cell activated with nonaq.
electrolyte having sulfate additive)
IT 7440-02-0, Nickel, uses **7440-32-6, Titanium,**
uses
(**current collector**; method for reducing
voltage delay in alkali metal **electrochem. cell**
activated with nonaq. electrolyte having sulfate additive)
IT 60-29-7, Ether, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses
75-05-8, Acetonitrile, uses 79-20-9, Methyl acetate 96-48-0,
γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8,
Diethyl carbonate 108-20-3, Diisopropyl ether 108-29-2,
γ-Valerolactone 108-32-7, Propylene carbonate 110-71-4,

1,2-Dimethoxyethane 111-96-6, Diglyme 112-49-2, Triglyme 120-94-5, n-Methylpyrrolidine 127-19-5, Dimethyl acetamide 143-24-8, TeTraglyme 463-79-6D, Carbonic acid, dialkyl deriv., uses 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 2923-17-3 2923-20-8 4437-85-8, Butylene carbonate 5137-45-1, 1-Ethoxy-2-methoxyethane 7439-93-2, Lithium, uses 7791-03-9, Lithium perchlorate 11099-11-9, Vanadium oxide 11105-02-5, Silver vanadium oxide 12057-24-8, Lithia, uses 12789-09-2, Copper Vanadium oxide 12798-95-7 13453-75-3, Lithium fluorosulfate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate 56525-42-9, Methyl propyl carbonate 90076-65-6 115028-88-1 132404-42-3 181183-66-4, Copper silver vanadium oxide
(method for reducing voltage delay in alkali metal **electrochem. cell** activated with nonaq. electrolyte having sulfate additive)

IT 57-52-3, Bis(triethyltin) sulfate 75-93-4, Monomethyl sulfate 110-92-9 540-82-9, Monoethyl sulfate 4153-34-8, Bis(trimethyltin) sulfate 7440-44-0, Carbon, uses 10218-25-4, Bis(tripropyltin) sulfate 10249-85-1, Bis(tributyltin) sulfate 13425-84-8 15507-13-8, Monobutyl sulfate 18056-07-0, Bis(triethylsilyl)sulfate 18166-30-8 18230-79-0 18306-29-1, Bis(trimethylsilyl)sulfate 18495-74-4, Dibenzyl sulfate 21706-75-2 26687-85-4 27063-40-7 55909-70-1, Sulfuric acid, Methyl methylphenyl ester 57875-67-9 59427-05-3 63869-87-4 91695-35-1 191605-42-2 320381-72-4 320381-73-5 320381-74-6 320381-75-7 320381-76-8 320381-77-9 320381-78-0 320381-79-1 320381-80-4 320381-81-5 320381-82-6 320381-83-7 320381-84-8 320381-85-9 320381-86-0 320381-87-1
(method for reducing voltage delay in alkali metal **electrochem. cell** activated with nonaq. electrolyte having sulfate additive)

IT 7429-90-5, Aluminum, uses 7782-42-5, Graphite, uses 12597-68-1, Stainless steel, uses
(powd.; method for reducing voltage delay in alkali metal **electrochem. cell** activated with nonaq. electrolyte having sulfate additive)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 15 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 131:339474 HCA Full-text
TI **Electrochemical cell** system with side-by-side arrangement of cells
IN Bloomfield, David P.; Banerjee, Shoibal; Polevaya, Olga Y.; Ferris, James J.
PA E. I. Du Pont de Nemours & Co., USA
SO U.S., 11 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5989741	A	19991123	US 1998-93319	199806 08

<--

PRAI US 1997-49116P P 19970610 <--
US 1997-49672P P 19970616 <--

AB An **electrochem. cell** system includes an anode compartment and a cathode compartment sepd. by a membrane and electrode structure. This structure has an anode surface with a plurality of anodes in a side-by-side arrangement exposed to the anode compartment and a cathode surface with a plurality of cathodes in a side-by-side arrangement exposed to the cathode compartment. The anodes and cathodes are sepd. by a layer of ion exchange polymer and register with each other so that opposing pairs of anodes and cathodes form cells. The membrane and electrode structure further includes a plurality of current collector screens. The current collector screens have an anode contact area in contact with the anode, a cathode contact area in contact with the cathode and a feed through area extending between cells and crossing from the anode contact area to the cathode contact area to connect the anode and cathode of adjacent cells. The invention provides a polymer **electrolyte** membrane **electrochem. cell** system which can be less complicated, lighter in wt. and/or is easier to manuf. that existing stack designs.

IT **7440-32-6, Titanium**, uses
(**current collectors; electrochem. cell** system with side-by-side arrangement of cells)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M008-10
INCL 429032000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38, 72

ST polymer **electrolyte** membrane fuel **cell** arrangement

IT Polyurethanes, uses
(adhesive; **electrochem. cell** system with side-by-side arrangement of cells)

IT Fuel **cells**
(polymer **electrolyte** membrane; **electrochem. cell** system with side-by-side arrangement of cells)

IT Fluoropolymers, uses
(sulfonated; **electrochem. cell** system with side-by-side arrangement of cells)

IT 11116-16-8, Titanium nitride
(coating; **electrochem. cell** system with side-by-side arrangement of cells)

IT **7440-32-6, Titanium**, uses
(**current collectors**; **electrochem. cell** system with side-by-side arrangement of cells)

IT 7440-06-4, Platinum, uses
(**electrochem. cell** system with side-by-side arrangement of cells)

IT 7440-44-0, Carbon, uses 26654-97-7, Perfluoro(3,6-dioxo-4-methyl-7-octenesulfonyl fluoride)-tetrafluoroethylene copolymer
(**electrochem. cell** system with side-by-side arrangement of cells)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 16 OF 27 HCA COPYRIGHT 2007 ACS on STN

AN 131:90258 HCA Full-text

TI Control of swelling in alkali metal batteries

IN Gan, Hong; Takeuchi, S. Esther

PA Wilson Greatbatch Ltd., USA

SO Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 930664	A2	19990721	EP 1998-308677	199810 23
		<--		
EP 930664	A3	20020814		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

AU 9894144 A 19990722 AU 1998-94144 199811 25 <--

AU 743438 B2 20020124

JP 11265722 A 19990928 JP 1998-377178 199812 29 <--

PRAI US 1998-2534 A 19980102 <--

AB An alkali metal/solid cathode **electrochem. cell**, particularly a Li/Ag2V4O11 cell, having an anode-to-cathode capacity ratio of about 0.68 to about 0.96, is disclosed. This provides the cell with negligible, if any, cell swelling during discharge.

IT **7440-32-6**, **Titanium**, uses
(**current collector**; control of swelling in alkali metal batteries)

RN 7440-32-6 HCA

CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M006-16
ICS H01M004-48; H01M004-58; H01M004-62; H01M004-66

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT **7440-32-6**, **Titanium**, uses 7440-33-7, Tungsten, uses 7440-50-8, Copper, uses
(**current collector**; control of swelling in alkali metal batteries)

L21 ANSWER 17 OF 27 HCA COPYRIGHT 2007 ACS on STN

AN 126:123932 HCA Full-text

TI Spiral-type **electrolysis cell**

IN Yasui, Shinichi; Sasaki, Takashi; Kobayashi, Hiroko; Hirai, Seiji; Nagao, Mamoru; Harada, Michuki

PA Shinko Pantec Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 08325772 A 19961210 JP 1995-135094
199506
01
<--
JP 2971780 B2 19991108
PRAI JP 1995-135094 19950601 <--

AB The cell comprises a flat electrolyte film unit (coiled and arranged in a pressure vessel) contg. (A) a solid electrolyte film in the center, (B) a successive laminate of (at an anode side, from the solid electrolyte film) a porous feeder, an anode sheet contg. a porous current collector, and a water-permeating sheet as a pure water-supplying path, and (C) a successive laminate of (at a cathode side, from the solid electrolyte film) a porous feeder, a cathode sheet, and an air-permeating sheet. The cell is useful for electrolysis of water to effectively obtain O2 and H2 without leaking to outside of the cell.

IT **7440-32-6, Titanium**, uses
(**current collector**; in spiral-type **electrolysis cell** useful for **electrolysis** of water for)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM C25B009-00
ICS C25B001-00; C25B011-02
CC 72-4 (Electrochemistry)
Section cross-reference(s): 49
ST **electrolysis cell** structure; water **electrolysis cell** structure
IT **Electrolytic cells**
(spiral-type **electrolysis cell** useful for **electrolysis** of water for)
IT 66796-30-3, Nafion 117
(cation exchanger; in spiral-type **electrolysis cell** useful for **electrolysis** of water for)
IT **7440-32-6, Titanium**, uses
(**current collector**; in spiral-type **electrolysis cell** useful for **electrolysis** of water for)
IT 1333-74-0P, Hydrogen, preparation 7782-44-7P, Oxygen, preparation
(prepn.; spiral-type **electrolysis cell** useful for **electrolysis** of water for)
IT 7732-18-5, Water, processes
(spiral-type **electrolysis cell** useful for **electrolysis** of water)

L21 ANSWER 18 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 121:143960 HCA Full-text
TI Gas diffusion electrodes for electrochemical reactors
IN Furuya, Choichi
PA Tanaka Precious Metal Ind, Japan; Furuya Choichi
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06096771	A	19940408	JP 1992-78598	199202 28 <--
US 5618392	A	19970408	US 1995-421840	199504 13 <--

PRAI JP 1991-314086 A 19911031 <--
JP 1991-340347 A 19911129 <--
JP 1992-78597 A 19920228 <--
JP 1992-78598 A 19920228 <--
US 1992-969089 B2 19921030 <--

AB The electrodes have a current collector embedded in a reaction layer contg. hydrophobic and hydrophilic areas and hydrophobic and hydrophilic insulator layers on the opposite sides of the reaction layer. These electrodes have high efficiency in reducing H and oxidizing H+ in the presence of metal ions. Electrodes for HCl **electrolytic cells** were prepd.

IT **7440-32-6, Titanium**, properties
(**current collectors**, gas diffusion electrodes contg., hydrophobic and hydrophilic insulator surface layers for, for **electrolytic cells**)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC ICM H01M004-86
ICS C25B011-03; C25D017-10
CC 72-2 (Electrochemistry)
ST hydrogen chloride **electrolytic cell** electrode;

electrolytic cell gas diffusion electrode
IT **Electrolytic cells**
(gas diffusion electrodes with hydrophobic and hydrophilic insulator surface layers for)
IT Carbon black, miscellaneous
(gas diffusion electrodes with reaction layers contg., hydrophobic and hydrophilic insulator surface layers for, for **electrolytic cells**)
IT Electrodes
(gas-diffusion, with hydrophobic and hydrophilic insulator surface layers, for **electrolytic cells**)
IT **7440-32-6, Titanium**, properties
(**current collectors**, gas diffusion electrodes contg., hydrophobic and hydrophilic insulator surface layers for, for **electrolytic cells**)
IT 9002-84-0, PTFE
(gas diffusion electrodes contg., hydrophobic and hydrophilic insulator surface layers for, for **electrolytic cells**)
IT 409-21-2, Silicon carbide, properties
(gas diffusion electrodes hydrophobic and hydrophilic insulator surface layers of, for **electrolytic cells**)
IT 7440-06-4, Platinum, properties
(gas diffusion electrodes with reaction layers contg., hydrophobic and hydrophilic insulator surface layers for, for **electrolytic cells**)

L21 ANSWER 19 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 114:236591 HCA Full-text
TI Durability tests of constituent materials for hydrochloric acid electrolyzers using solid polymer electrolyte-electrocatalyst composites
AU Uehara, Akira; Kawami, Youji; Takenaka, Hiroyasu
CS Gov. Ind. Res. Ins. Osaka, Ikeda, 563, Japan
SO Soda to Enso (**1990**), 41(10), 368-78
CODEN: STOEB8; ISSN: 0371-3768
DT Journal
LA Japanese
AB Durability test of hydrochloric acid **electrolysis cells** using a solid polymer electrolyte of sulfonated fluororesin membrane was reported. Three kinds of cells were tested: (1) an Ir-Pt/Nafion 117/Pt-Ir membrane-electrode composite was combined with a IrO2-coated expanded **titanium** cathode **current collector**(CC), a porous graphite plate anode **current collector**(AC), a **titanium** cathode frame(CF), and a resin-impregnated graphite anode frame(AF);(2) an IR-Pt/Nafion 117/Pt-Ir composite was with a Ir-coated expanded titanium CC, a flexible porous graphite sheet AC, and high d. graphite CF and AF; (3) an Ir-Pt/A112(Asahi Kasei Corp.)/Pt-Ir composite was with an Ir-coated expanded titanium CC, a flexible porous graphite sheet AC, a titanium CF, and a high d. graphite AF. They were operated at 27-

28, 60 A/cm2 c.d., 1-10 mol/kg HCl concn., over 3 mo for (1) and (3), over 200 h. for (2). Cell(1) gave 1.58-1.80 V cell voltage and 89-97% cathode current efficiency; cell(2) gave 1.60-2.00 V and 87-96%; and cell(3) gave 1.60-1.85 V and 89-96%. All of the constituent materials except the cathode catalyst provided good durability. The degrdn. of the cathode catalyst was not fatal.

CC 72-9 (Electrochemistry)
Section cross-reference(s): 49

ST hydrochloric acid electrolyzer material durability; solid polymer electrolyte electrocatalyst composite electrolyzer; iridium dioxide coated **titanium current collector**; tantalum current collector iridium coated; Nafion iridium platinum electrode electrolyzer; rhodium platinum Nafion electrode electrolyzer

IT **Electrolytic cells**
(composite, for hydrochloric acid, composed of solid polymer electrolyte-electrocatalyst)

IT 7782-42-5, Graphite, uses and miscellaneous
(anode, for hydrochloric acid **electrolytic cells**)

IT 7440-25-7, Tantalum, uses and miscellaneous 7440-32-6, Titanium, uses and miscellaneous
(cathode current collector, iridium dioxide-coated, for hydrochloric acid **electrolytic cells**)

IT 7647-01-0, Hydrochloric acid, uses and miscellaneous
(**electrolytic cells** for, with iridium-rhodium or iridium-platinum and Nafion or resin membrane)

IT 7439-88-5, Iridium, uses and miscellaneous
(expanded **titanium** or tantalum cathode **current collector** coated with, for hydrochloric acid **electrolytic cells**)

IT 37186-87-1 37364-99-1
(membrane electrode composed of Nafion 117 and, for hydrochloric acid **electrolysis cells**, durability of)

IT 66796-30-3, Nafion 117
(membrane electrode composed of iridium with rhodium or iridium with platinum and, for hydrochloric acid **electrolytic** anodic **cells**, durability of)

IT 133874-85-8, A 112
(membrane electrode composed of iridium-platinum and, for hydrochloric acid **electrolytic cells**, comparison with Nafion, durability of)

IT 12030-49-8, Iridium oxide (IrO2)
(**titanium** or tantalum cathode **current collector** coated with, for hydrochloric acid **electrolytic cells**)

L21 ANSWER 20 OF 27 HCA COPYRIGHT 2007 ACS on STN

AN 107:118358 HCA Full-text
TI Gas-diffusion electrodes
IN Furuya, Choichi; Motoo, Satoru
PA Tanaka Noble Metal Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 62154571	A	19870709	JP 1985-294429	198512 27 <--
JP 06007488	B	19940126		

PRAI JP 1985-294429 19851227 <--

AB The electrodes have a reaction layer of a Pt-group metal (and/or its oxide)-carbon black-PTFE mixt. with fine hydrophobic and hydrophilic areas attached to a hydrophobic gas-diffusion layer of a carbon black-PTFE mixt., and the opposite side of the gas-diffusion layer is attached to a **current collector** of a **Ti**, Ta, or Ti- or Ta-coated Cu screen or perforated plate coated with a Pt-group metal and/or its oxide. An electrode was prepd. using a 3:3:2 RuO2 + IrO2 catalyst (av. size 250 Å)-hydrophobic carbon black (av. size 450 Å)-PTFE (av. size 0.3μ) mixt. for the reaction layer, a 7:3 hydrophobic carbon black (av. size 420 Å)-PTFE (av. size 0.3μ) mixt. for the gas-diffusion layer and a screen of 0.3-mm-diam. Ti wires coated with 0.5-μ Pt for the collector. Electrodes of the invention are resistant to acid corrosion and can be used in fuel **cells**, secondary batteries, **electrochem.** reactors, and **electrolytic cells.**

IC ICM H01M004-86
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
IT 7440-06-4, Platinum, uses and miscellaneous
(**current collectors** from **titanium** coated with, for gas-diffusion electrodes)
IT 7440-50-8, Copper, uses and miscellaneous
(**current collectors** from **titanium**- or tantalum-coated, for gas-diffusion electrodes)
IT 7440-25-7, Tantalum, uses and miscellaneous 7440-32-6, **Titanium**, uses and miscellaneous
(**current collectors**, for gas-diffusion electrodes)

L21 ANSWER 21 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 104:92188 HCA Full-text
TI Cathode and **electrochemical cells** for high current density and high power density **electrochemical**

cells

IN Faust, Marilyn A.; Osterhoudt, Hans W.

PA Eastman Kodak Co., USA

SO Eur. Pat. Appl., 24 pp.
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 165795	A2	19851227	EP 1985-304309	198506 17
			<--	
EP 165795	A3	19880217		
R: DE, FR, GB				
US 4565751	A	19860121	US 1984-621350	198406 18
			<--	
CA 1236160	A1	19880503	CA 1984-466843	198411 01
			<--	
JP 61013560	A	19860121	JP 1985-130068	198506 17
			<--	

PRAI US 1984-621350 A 19840618 <--

AB A metal-foil current collector is coated with a porous layer (porosity >43%) of a dispersion of (CFx)n (x ≤1.2, n is an indeterminately large no.), a current carrier, and an adhesive to form a cathode for a battery using a light-metal anode. Thus, a 0.10-mm-thick stainless steel foil was coated with a dispersion contg. 14.3% of a mixt. of (CFx)n 75, C 10, and poly(vinyl acetate) 15 wt.%, dried at .apprx.65° for .apprx.15 h. A 3.6 + 1.7-cm2 patch of the dried foil (coating porosity 73%) was wrapped with a 0.127-mm-thick nonwoven polypropylene-based separator. A battery using the wrapped foil cathode, a Li anode, a M LiClO4 in propylene carbonate-MeOCH2CH2OMe (vol. ratio = 1:1) electrolyte showed a limiting c.d. of 135 mA/cm2 and a max. power d. of 78 mW/cm2 vs. 115 mA/cm2 and 62 mW/cm2, resp., for a battery using a PTFE binder and a **Ti** grid **current collector.**

IC ICM H01M004-06
ICS H01M004-62; H01M004-66; H01M006-16

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

L21 ANSWER 22 OF 27 HCA COPYRIGHT 2007 ACS on STN

AN 103:44899 HCA Full-text

TI Aluminum reduction cells
IN Dewing, Ernest William; Gesing, Adam Jan; Hudson, Thomas James; Manfredo, Louis John; Wheeler, Douglas James; Bennett, William Raymond; Clere, Thomas Merle
PA Alcan International Ltd., Can.
SO Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 145411	A2	19850619	EP 1984-308250	198411 28
		<--		
EP 145411	A3	19850724		
EP 145411	B1	19880127		
R: AT, CH, DE, FR, GB, IT, LI, NL, SE				
NO 8404739	A	19850530	NO 1984-4739	198411 28
		<--		
NO 163966	B	19900507		
NO 163966	C	19900815		
BR 8406049	A	19850903	BR 1984-6049	198411 28
		<--		
ES 538042	A1	19851101	ES 1984-538042	198411 28
		<--		
US 4612103	A	19860916	US 1984-675732	198411 28
		<--		
AT 32239	T	19880215	AT 1984-308250	198411 28
		<--		
CA 1244794	A1	19881115	CA 1984-468775	198411 28
		<--		

AU 8436031 A 19850606 AU 1984-36031
198411
29
<--
AU 565174 B2 19870910
JP 60131989 A 19850713 JP 1984-252798
198411
29
<--
JP 62056958 B 19871127
PRAI GB 1983-31769 A 19831129 <--
GB 1984-17452 A 19840709 <--
EP 1984-308250 A 19841128 <--
AB The cathode collectors are embedded in the pot lining of this Al electrowinning cell. A section of the current collector comprises a major portion by vol. of discrete elec. conducting Al-wettable bodies joined or surrounded by Al-contg. metal which is at least partially fluid when the cell is in operation. These Al-wettable bodies in the form of sheets or thin slabs are aligned with their major faces parallel to one another and to the axis of the collector section. The pot lining is Al2O3 and the collector bodies TiB2.
IC ICM C25C003-08
ICS C25C003-16
CC 72-8 (Electrochemistry)
ST aluminum electrowinning cathode current collector; **titanium** boride **current collector** aluminum
IT Cathodes
(**current collectors, titanium** diboride, in aluminum recovery cells)
IT **Electrolytic cells**
(for aluminum recovery)

L21 ANSWER 23 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 103:44897 HCA Full-text
TI Aluminum reduction cells
IN Dewing, Ernest William; Gesing, Adam Jan; Mitchell, David Nelson; Pant, Aniket
PA Alcan International Ltd., Can.
SO Eur. Pat. Appl., 25 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 145412	A2	19850619	EP 1984-308251	198411

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EP 145412 A3 19850717
EP 145412 B1 19880316
R: AT, CH, DE, FR, GB, IT, LI, NL, SE
NO 8404738 A 19850530 NO 1984-4738
198411
28

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NO 165034 B 19900903
NO 165034 C 19901212
ZA 8409285 A 19850731 ZA 1984-9285
198411
28

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ZA 8409286 A 19850731 ZA 1984-9286
198411
28

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BR 8406048 A 19850903 BR 1984-6048
198411
28

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ES 538043 A1 19851101 ES 1984-538043
198411
28

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US 4613418 A 19860923 US 1984-675718
198411
28

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AT 33044 T 19880415 AT 1984-308251
198411
28

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CA 1235671 A1 19880426 CA 1984-468776
198411
28

<--

AU 8436030 A 19850606 AU 1984-36030
198411
29

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AU 568170 B2 19871217
JP 60131988 A 19850713 JP 1984-252797
198411

<--

JP 62056957 B 19871127

PRAI GB 1983-31769 A 19831129 <--

EP 1984-308251 A 19841128 <--

AB In this Al electrowinning cell the cathode current collectors are embedded in the pot lining. In the floor of the cell are depressions wherein are placed the end of a current collector, the other end being connected to the external elec. supply. The depressions are filled with metal-wettable bodies e.g. TiB2 spheres with the interstices filled with molten Al. The spheres are of a size to prevent entry of electrolyte or sludge.

IC ICM C25C003-08

CC 72-8 (Electrochemistry)

ST aluminum electrowinning cathode current collector; **titanium** boride aluminum **current collector**

IT Cathodes

(**current collectors, titanium** diboride for aluminum recovery cells)

IT **Electrolytic cells**

(for aluminum recovery, cathode current collector for)

L21 ANSWER 24 OF 27 HCA COPYRIGHT 2007 ACS on STN

AN 100:41846 HCA Full-text

TI Electrolytic production of hydrogen peroxide and its use

IN Stucki, Samuel

PA BBC A.-G. Brown, Boveri und Cie., Switz.

SO Eur. Pat. Appl., 23 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 95997	A1	19831207	EP 1983-710018	198304 11
		<--		
EP 95997	B1	19870401		
R: CH, DE, FR, GB, IT, LI				
US 4455203	A	19840619	US 1983-494255	198305 13
		<--		
JP 58213885	A	19831212	JP 1983-91649	198305 26

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PRAI CH 1982-3294 A 19820528 <--

AB A solid-**electrolyte cell** was used to produce H2O2 from H2O and O or from an aq. soln. and O. A membrane of Nafion 120, has a precious metal mixed oxide, (Ru0.5Ir0.5)O2, on 1 side as the anode and on the other side a graphite coating as the cathode. The anodic **current collector** was sintered **Ti** foil and the cathodic counterpart was a Ni screen. Salt-contg. H2O was electrolyzed with a stream of damp O entering the cathode chamber. A c.d. of 10 mA/cm2 was used at 1-1.4 V. The H2O2 produced in the cathode chamber was .apprx.3%.

IC C25B001-30; C25B009-00

CC 72-9 (Electrochemistry)

IT **Electrolytic cells**
(for hydrogen peroxide manuf., solid-electrolyte)

IT 7722-84-1P, preparation
(prodn. of, solid-**electrolyte cell** for)

L21 ANSWER 25 OF 27 HCA COPYRIGHT 2007 ACS on STN

AN 99:202488 HCA Full-text

TI Large-surface current collector for an **electrochemical cell** in the form of a porous titanium plate or sheet

IN Devantay, Hubert; Stucki, Samuel

PA BBC A.-G. Brown, Boveri und Cie., Switz.

SO PCT Int. Appl., 17 pp.
CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 8303105	A1	19830915	WO 1983-CH21	198302
				28
		<--		
W: US				
RW: CH, DE, FR, GB				
EP 102966	A1	19840321	EP 1983-900695	198302
				28
		<--		
R: CH, DE, FR, GB, LI				

PRAI CH 1982-1343 A 19820305 <--

AB A current collector for a H2O **electrolysis cell** is described. For the substrate, a non-porous graphite plate is used and upon this plate is placed a uniform layer of dry Ti powder or a viscous, homogeneous paste of spongy Ti in a H2O-free terpineol (C10H18O). The solvent was removed by heating at .apprx.200° in vacuum, and then the plate was sintered at 900° to form a porous layer. Finally, the plate was electrochem. doped with Pt or with a mixt. of Ir oxide and Ru oxide.

IT **7440-32-6**, uses and miscellaneous
(**current collector**, for water electrolysis)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC C22C001-04; B22F003-22; B22F003-18; B22F007-02
CC 72-9 (Electrochemistry)
IT **7440-32-6**, uses and miscellaneous
(**current collector**, for water electrolysis)
IT 7732-18-5, reactions
(electrolysis of, **titanium current collector** for)
IT 7440-06-4, uses and miscellaneous
(**titanium current collector** doped with, for water electrolysis)
IT 11113-84-1 11129-89-8 12645-46-4
(**titanium current collector** doped with, for water electrolysis)
IT 7782-42-5, uses and miscellaneous
(**titanium current collector** on, for water electrolysis)

L21 ANSWER 26 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 95:228086 HCA Full-text
TI Solid polymer electrolyte
IN White, Preston Samuel
PA PPG Industries, Inc. , USA
SO Fr. Demande, 27 pp.
CODEN: FRXXBL
DT Patent
LA French
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI FR 2475581	A1	19810814	FR 1981-2524	198102 09
NL 8100168	A	19810901	NL 1981-168	198101 15

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SE 8100305 A 19810812 SE 1981-305
198101
20
<--
NO 8100191 A 19810812 NO 1981-191
198101
21
<--
DE 3104122 A1 19811126 DE 1981-3104122
198102
06
<--
GB 2069006 A 19810819 GB 1981-3971
198102
10
<--
JP 56127782 A 19811006 JP 1981-18860
198102
10
<--
BE 887464 A1 19810811 BE 1981-203758
198102
11
<--
US 4369103 A 19830118 US 1981-293021
198108
14
<--
PRAI US 1980-120247 A 19800211 <--
US 1979-105055 A2 19791219 <--

AB Cells were made with a crosslinked, permionic, carboxylic acid-contg. fluorocarbon resin (Q) diaphragm, contacted on both sides by electrodes with metal current collectors. The cathode was made by molding a powd. mixt. of 316 stainless steel, Fe or Ni in a carboxylic acid contg. thermoplastic, fluorocarbon, ion-exchange resin (X) binder to a Cu screen current collector. An anode was made by coating 1 side of the Q diaphragm with 0.25-mm thick layer of a powd. mixt. of 1 part graphite and 2 parts X binder, and molding it in place for 10 min at 200° under 55 kg/cm2 pressure. A Pt-Sn-Ru coated **Ti** screen **current collector** was pressed against the anode coating. Alternately, the anode compn. could be molded on the Ti screen. The cathode was pressed against the other side of the diaphragm to make a cell. The cell is useful for prodn. of Cl and H from satd. brine.

IT **7440-32-6**, uses and miscellaneous
(**current collector**, metal-coated, on anode,
for diaphragm **cell** for brine **electrolysis**)
RN 7440-32-6 HCA
CN Titanium (CA INDEX NAME)

Ti

IC C25B013-04; C25B001-26
CC 72-10 (Electrochemistry)
Section cross-reference(s): 49
IT Fluoropolymers
(carboxy group-contg., diaphragm, for **electrolytic cell** for brine **electrolysis**)
IT **Electrolytic cells**
(diaphragm, with carboxy group-contg. electrolyte, for brine electrolysis)
IT 7439-89-6, uses and miscellaneous 7440-02-0, uses and miscellaneous 7782-42-5, uses and miscellaneous
(cathode, with fluoropolymer binder, for diaphragm **cell** for brine **electrolysis**)
IT 11107-04-3
(cathode, with fluoropolymer binder, for diaphragm **cell** for brine **electrolysis**)
IT 7440-05-3, uses and miscellaneous 7440-06-4, uses and miscellaneous 7440-18-8, uses and miscellaneous 7440-31-5, uses and miscellaneous
(current collector coating contg., on titanium, for anode for diaphragm **cell** for brine **electrolysis**)
IT **7440-32-6**, uses and miscellaneous
(**current collector**, metal-coated, on anode, for diaphragm **cell** for brine **electrolysis**)

L21 ANSWER 27 OF 27 HCA COPYRIGHT 2007 ACS on STN
AN 70:25224 HCA Full-text
TI Cathode current collectors containing aluminum nitride for **electrolytic cells** producing aluminum
IN Richards, Nolan Earle; Berry, James S., Jr.; Johnston, Thomas Joseph
PA Reynolds Metals Co.
SO U.S., 3 pp. Division of U.S. 3328280
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3408312	A	19681029	US 1967-649757	196705 03

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PRAI US 1967-649757 A 19670503 <--

AB Practically the same disclosure as in the earlier patent, with a short description of cold pressing the cermet collectors in tool steel at 208,000 psi. and sintering 25 min. in graphite at 1850°. The claims covering both cermet compns. and processing are broader in the present division.

INCL 252518000

CC 77 (Electrochemistry)

ST cermets cathodes current collectors; cathodes cermets current collectors; current collectors cathodes cermets; aluminum **electrolysis cell**; **cell** Al **electrolysis**; nitrides Al current collector; **titanium** diboride **current collector**; borides **Ti current collector**; refractory metal current collector

IT Lining materials
(cermet, for aluminum **electrolytic cells**)

IT **Electrolytic cells**
(for aluminum, cermet linings for)

IT 12045-63-5 24304-00-5
(in linings for aluminum **electrolytic cells**)

IT 7429-90-5P, preparation
(recovery of, cermet linings for **electrolytic cells** in)